Smithsonian

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Smithsonian Institution

FY 2001 Budget Justification to OMB

September 1999

SMITHSONIAN INSTITUTION
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I. OVERVIEW

Mission Statement. The mission of the Smithsonian Institution is the increase and diffusion of knowledge.

Interrelated Strategic and Performance Plans. As outlined below, the goals of the Smithsonian's Strategic and Performance Plans are complementary and interrelated. In subsequent sections of this submission, the Institution's base operations and the FY 2001 budget request are presented in the context of these plans.

Strategic Plan Goals	Performance Plan Goals
I. Increase knowledge through research activities and the use of Smithsonian collections.	**1.** Maintain and enhance research. **2.** Provide improved access to collections, including expanded use of electronic technology. **3.** Provide effective collections care, including improved storage.
II. Diffuse knowledge through exhibitions, publications, programs, electronic communications, and affiliations; and through improvements in education and museum training opportunities.	**1.** Provide new and updated exhibits that serve a wider audience.
III. Support increased knowledge and diffusion through improvements in finance, management, and physical infrastructure of the Institution.	**1.** Improve the efficiency of Institution-wide administrative work processes. **2.** Seek opportunities to improve fundraising and increase revenues.* **3.** Maintain, preserve, and upgrade the quality, condition, and security of facilities.

*This is a totally Trust-funded activity, and will not be discussed further in this 2001 Federal Budget request.

Change in leadership and timing of plan revisions. Because the Smithsonian will undergo a change in leadership during FY 2000, when a new Secretary will be appointed, no changes in long-range planning goals are attempted in this budget cycle. It is anticipated that a thorough review of objectives, goals, and strategies as they relate to the Institution's mission will take place after the new Secretary is appointed.

Resource Profile

Account	FY 1999 Appropriation	FY 2000 President's Budget	FY 2001 Request		
			Scenario 1	Scenario 2	Scenario 3
Salaries & Expenses	[a]$351,854,000	$380,501,000	$388,901,000	$381,453,000	$424,237,000
Repair, Restoration and Alterations	44,400,000	[b]47,900,000	52,000,000	51,000,000	64,000,000
Construction	16,000,000	19,000,000	6,500,000	6,000,000	6,500,000
	$412,254,000	$447,401,000	$447,401,000	$438,453,000	$494,737,000

[a]FY 1999 Salaries and Expenses includes $4,700,000 emergency supplemental appropriation to replace non-Y2K-compliant components of the Smithsonian Institution Proprietary Security System.

[b]The FY 2000 request also includes $17,000,000 to become available October 1, 2000, $17,000,000 to become available on October 1, 2001, and $18,000,000 to become available on October 1, 2002, to complete the renovation of the American Art and Portrait Gallery (Patent Office Building).

Summary. In response to guidance from the Office of Management and Budget on the preparation of the FY 2001 Federal budget request, the Smithsonian Institution presents in this package, within the context of its Strategic and Performance Plans, supporting material for three possible scenarios. Scenario 1 assumes that a freeze is imposed at the level of the FY 2000 President's Budget, Scenario 2 assumes a 2-percent reduction below the freeze level, and Scenario 3 provides a description of program initiatives that would be undertaken should an expansion beyond the freeze level be possible. For each scenario, the effect upon the Institution's performance goals is described.

II. FY 2001 REQUEST
A. Base Profile

Introduction. The FY 1998 actual Federal expenditures of the Smithsonian Institution for salaries and expenses are $331,390,000. Table 1 shows the unit breakdown of this amount by program and object class. The table also provides a comparison of FY 1998 expenditures with the FY 1999 budget, the FY 2000 estimate, and FY 2001 estimates at the freeze level.

Table 1. Comparison of Expenses by Program and Object Class

(Dollars in thousands)	FY 1998 Actuals	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate
MUSEUMS AND RESEARCH INSTITUTES				
Anacostia Museum & Ctr. for Afr. Amer. History & Culture	**1,784**	**1,822**	**1,880**	**1,906**
Program	1,318	1,186	1,224	1,241
Support	466	636	656	665
	1,784	**1,822**	**1,880**	**1,906**
Salaries and Benefits	1,155	1,227	1,285	1,311
Other Expenses	629	595	595	595
Archives of American Art	**1,540**	**1,619**	**1,685**	**1,717**
Program	1,219	1,150	1,197	1,220
Support	321	469	488	497
	1,540	**1,619**	**1,685**	**1,717**
Salaries and Benefits	1,376	1,380	1,446	1,478
Other Expenses	164	239	239	239
Arthur M. Sackler Gallery/Freer Gallery of Art	**5,751**	**5,851**	**6,064**	**6,168**
Program	4,064	4,208	4,361	4,436
Support	1,687	1,643	1,703	1,732
	5,751	**5,851**	**6,064**	**6,168**
Salaries and Benefits	4,478	4,532	4,745	4,849
Other Expenses	1,273	1,319	1,319	1,319
Center for Folklife and Cultural Heritage	**1,767**	**1,697**	**1,750**	**1,776**
Program	1,506	1,447	1,492	1,514
Support	261	250	258	262
	1,767	**1,697**	**1,750**	**1,776**
Salaries and Benefits	1,085	1,117	1,170	1,196
Other Expenses	682	580	580	580

(Dollars in thousands)	FY 1998 Actuals	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate
Cooper-Hewitt, National Design Museum	**2,793**	**2,751**	**2,869**	**2,927**
Program	1,514	1,273	1,327	1,354
Support	1,279	1,478	1,542	1,573
	2,793	**2,751**	**2,869**	**2,927**
Salaries and Benefits	2,265	2,042	2,160	2,218
Other Expenses	528	709	709	709
Hirshhorn Museum and Sculpture Garden	**4,351**	**4,444**	**4,615**	**4,690**
Program	3,111	3,074	3,192	3,244
Support	1,240	1,370	1,423	1,446
	4,351	**4,444**	**4,615**	**4,690**
Salaries and Benefits	3,321	3,600	3,771	3,846
Other Expenses	1,030	844	844	844
National Air and Space Museum	**12,301**	**12,695**	**15,228**	**15,484**
Program	8,528	7,681	9,213	9,368
Support	3,773	5,014	6,015	6,116
	12,301	**12,695**	**15,228**	**15,484**
Salaries and Benefits	11,121	11,380	12,813	13,069
Other Expenses	1,180	1,315	2,415	2,415
National Museum of African Art	**4,009**	**4,143**	**4,253**	**4,303**
Program	3,197	3,312	3,400	3,440
Support	812	831	853	863
	4,009	**4,143**	**4,253**	**4,303**
Salaries and Benefits	2,397	2,868	2,978	3,028
Other Expenses	1,612	1,275	1,275	1,275
National Museum of American Art	**8,145**	**8,267**	**8,617**	**8,776**
Program	6,433	6,726	7,011	7,140
Support	1,712	1,541	1,606	1,636
	8,145	**8,267**	**8,617**	**8,776**
Salaries and Benefits	6,760	6,541	6,891	7,050
Other Expenses	1,385	1,726	1,726	1,726
National Museum of American History	**18,438**	**18,973**	**19,811**	**20,240**
Program	14,292	14,784	15,437	15,771
Support	4,146	4,189	4,374	4,469
	18,438	**18,973**	**19,811**	**20,240**
Salaries and Benefits	16,831	17,793	18,631	19,060
Other Expenses	1,607	1,180	1,180	1,180

(Dollars in thousands)	FY 1998 Actuals	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate
National Postal Museum	**564**	**578**	**600**	**610**
Program	384	411	427	434
Support	180	167	173	176
	564	**578**	**600**	**610**
Salaries and Benefits	476	515	537	547
Other Expenses	88	63	63	63
National Museum of the American Indian	**13,236**	**16,632**	**22,090**	**22,993**
Program	8,446	9,790	13,003	13,535
Support	4,790	6,842	9,087	9,458
	13,236	**16,632**	**22,090**	**22,993**
Salaries and Benefits	8,628	10,438	11,618	11,777
Other Expenses	4,608	6,194	10,472	11,216
National Museum of Natural History	**40,752**	**41,224**	**42,807**	**43,599**
Program	35,358	40,407	41,958	42,734
Support	5,394	817	849	865
	40,752	**41,224**	**42,807**	**43,599**
Salaries and Benefits	31,872	34,365	35,948	36,740
Other Expenses	8,880	6,859	6,859	6,859
National Portrait Gallery	**5,289**	**5,406**	**5,618**	**5,725**
Program	3,620	3,748	3,895	3,969
Support	1,669	1,658	1,723	1,756
	5,289	**5,406**	**5,618**	**5,725**
Salaries and Benefits	4,436	4,678	4,890	4,997
Other Expenses	853	728	728	728
National Zoological Park	**19,163**	**19,664**	**20,463**	**20,824**
Program	10,795	11,667	12,141	12,355
Support	8,368	7,997	8,322	8,469
	19,163	**19,664**	**20,463**	**20,824**
Salaries and Benefits	16,175	16,906	17,705	18,066
Other Expenses	2,988	2,758	2,758	2,758
Smithsonian Astrophysical Observatory	**18,341**	**18,714**	**19,847**	**20,248**
Program	16,840	15,071	15,983	16,306
Support	1,501	3,643	3,864	3,942
	18,341	**18,714**	**19,847**	**20,248**
Salaries and Benefits	11,196	12,627	13,170	13,405
Other Expenses	7,145	6,087	6,677	6,843

(Dollars in thousands)	FY 1998 Actuals	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate
Smithsonian Center for Materials Research & Education	**2,932**	**3,055**	**3,170**	**3,225**
Program	2,926	2,596	2,694	2,741
Support	6	459	476	484
	2,932	**3,055**	**3,170**	**3,225**
Salaries and Benefits	2,357	2,245	2,360	2,415
Other Expenses	575	810	810	810
Smithsonian Environmental Research Center	**3,093**	**3,097**	**3,204**	**3,256**
Program	2,382	2,312	2,392	2,431
Support	711	785	812	825
	3,093	**3,097**	**3,204**	**3,256**
Salaries and Benefits	2,222	2,420	2,527	2,579
Other Expenses	871	677	677	677
Smithsonian Tropical Research Institute	**8,635**	**8,921**	**10,173**	**10,642**
Program	5,136	5,406	6,165	6,449
Support	3,499	3,515	4,008	4,193
	8,635	**8,921**	**10,173**	**10,642**
Salaries and Benefits	6,971	6,690	7,942	8,411
Other Expenses	1,664	2,231	2,231	2,231
Subtotal, Museums and Research Institutes	**172,884**	**179,553**	**194,744**	**199,109**
PROGRAM SUPPORT AND OUTREACH				
Communications and Educational Programs	**5,157**	**5,327**	**5,503**	**5,586**
Program	4,754	5,136	5,306	5,386
Support	403	191	197	200
	5,157	**5,327**	**5,503**	**5,586**
Salaries and Benefits	3,698	4,114	4,290	4,373
Other Expenses	1,459	1,213	1,213	1,213
Office of Exhibits Central	**2,175**	**2,218**	**2,319**	**2,371**
Program	1,918	2,218	2,319	2,371
Support	257	0	0	0
	2,175	**2,218**	**2,319**	**2,371**
Salaries and Benefits	2,052	2,070	2,171	2,223
Other Expenses	123	148	148	148
Major Scientific Instrumentation	**7,059**	**7,244**	**7,244**	**7,244**
Program	7,059	7,244	7,244	7,244
Support	0	0	0	0
	7,059	**7,244**	**7,244**	**7,244**
Salaries and Benefits	0	0	0	0
Other Expenses	7,059	7,244	7,244	7,244

(Dollars in thousands)	FY 1998 Actuals	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate
Museum Support Center	**3,234**	**4,955**	**5,036**	**3,976**
Program	2,005	3,679	3,739	2,952
Support	1,229	1,276	1,297	1,024
	3,234	**4,955**	**5,036**	**3,976**
Salaries and Benefits	1,442	1,912	1,993	2,033
Other Expenses	1,792	3,043	3,043	1,943
Smithsonian Institution Archives	**1,331**	**1,373**	**1,443**	**1,478**
Program	1,092	1,158	1,217	1,247
Support	239	215	226	231
	1,331	**1,373**	**1,443**	**1,478**
Salaries and Benefits	1,254	1,373	1,443	1,478
Other Expenses	77	0	0	0
Smithsonian Institution Libraries	**6,816**	**7,086**	**7,330**	**7,439**
Program	6,035	5,712	5,909	5,997
Support	781	1,374	1,421	1,442
	6,816	**7,086**	**7,330**	**7,439**
Salaries and Benefits	4,979	5,264	5,508	5,617
Other Expenses	1,837	1,822	1,822	1,822
SI Traveling Exhibition Service	**2,950**	**2,985**	**3,093**	**3,133**
Program	2,939	2,985	3,093	3,133
Support	11	0	0	0
	2,950	**2,985**	**3,093**	**3,133**
Salaries and Benefits	2,203	2,814	2,922	2,962
Other Expenses	747	171	171	171
Institution-Wide Programs	**5,180**	**5,693**	**10,693**	**10,693**
Program	3,616	2,883	5,415	5,415
Support	1,564	2,810	5,278	5,278
	5,180	**5,693**	**10,693**	**10,693**
Salaries and Benefits	68	0	0	0
Other Expenses	5,112	5,693	10,693	10,693
Subtotal, Program Support and Outreach	**33,902**	**36,881**	**42,661**	**41,920**

(Dollars in thousands)	FY 1998 Actuals	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate
ADMINISTRATION				
Administration	**32,589**	**33,498**	**34,619**	**35,377**
Program	838	760	785	802
Support	31,751	32,738	33,834	34,575
	32,589	**33,498**	**34,619**	**35,377**
Salaries and Benefits	25,340	26,682	27,803	28,561
Other Expenses	7,249	6,816	6,816	6,816
Subtotal, Administration	**32,589**	**33,498**	**34,619**	**35,377**
FACILITIES SERVICES				
Office of Protection Services	**30,885**	**36,984**	**35,753**	**36,736**
Program	0	0	0	0
Support	30,885	36,984	35,753	36,736
	30,885	**36,984**	**35,753**	**36,736**
Salaries and Benefits	29,203	30,853	32,322	33,305
Other Expenses	1,682	6,131	3,431	3,431
Office of Physical Plant	**61,130**	**64,938**	**72,724**	**75,024**
Program	8,465	8,697	9,740	10,048
Support	52,665	56,241	62,984	64,976
	61,130	**64,938**	**72,724**	**75,024**
Salaries and Benefits	32,255	31,757	24,245	24,999
Other Expenses	28,875	33,181	48,479	50,025
Subtotal, Facilities Services	**92,015**	**101,922**	**108,477**	**111,760**
TOTAL, S&E	**331,390**	**351,854**	**380,501**	**388,166**
General adjustments to achieve freeze level [1]				**735**
GRAND TOTAL S&E, FY 2001 SCENARIO 1				**388,901**

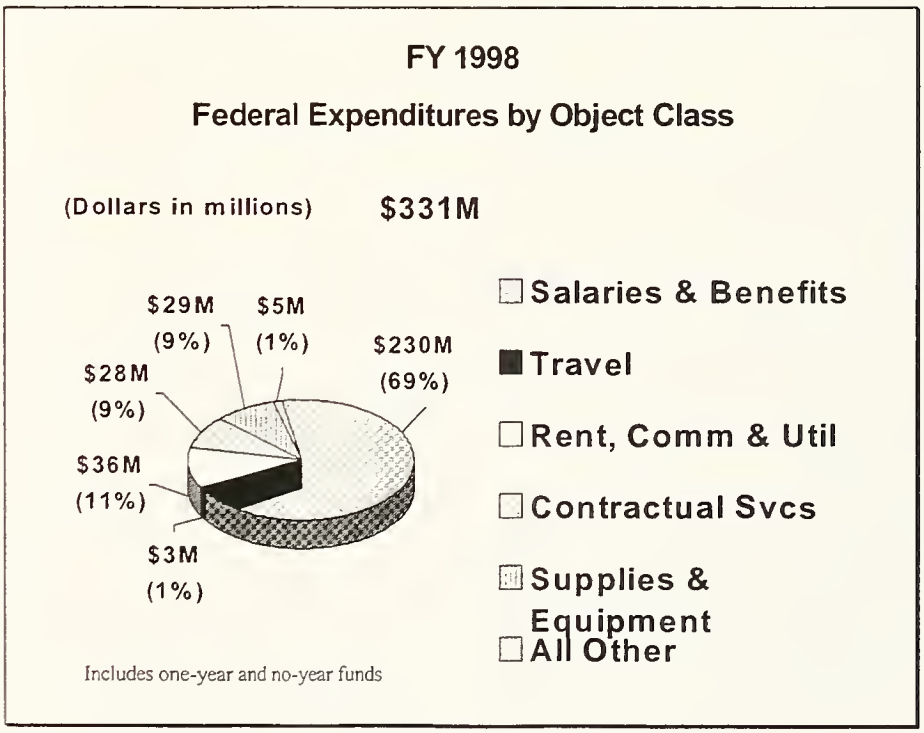
Note:
[1] General adjustments include increases for FICA ($265,000) and health insurance ($470,000).

Of the actual FY 1998 amount, approximately 69% represents the amount required to fund salaries and benefits of on-board personnel. The funding level for salaries and benefits has been relatively stable over the past five years, as reflected in Table 2 below. Overall funding for salaries and benefits has ranged from 68% to 71% during that time period. However, as can be seen from Table 1, in some units the cost of salaries and benefits represents 90% or more of their available Federal funding. The remaining 31% of the actual budget in 1998 is for other objects, which include the following: 1% for travel, 11% for rent, communications and utilities, 9% for contractual services, 9% for supplies and equipment, and 1% for all other. Table 3 provides a pie chart representation of the FY 1998 Federal expenditures by object class.

Table 2. Historical Expenditures by Object Class
Salaries and Expenses Account

(Dollars in thousands)	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998
Salaries and Benefits	$213,000	$217,000	$220,000	$220,000	$230,000
Travel	4,000	3,000	2,000	3,000	3,000
Rent, Communication & Utilities	30,000	29,000	30,000	35,000	36,000
Contractual Services	31,000	42,000	33,000	35,000	28,000
Supplies & Equipment	25,000	27,000	21,000	26,000	29,000
All Other	3,000	1,000	1,000	5,000	5,000
Total Smithsonian	**$306,000**	**$319,000**	**$307,000**	**$324,000**	**$331,000**

Table 3. FY 1998 Federal Expenditures by Object Class



If the impact of mandatory costs is considered within the context of other objects, a somewhat different picture emerges. Mandatory costs include utilities, communications, postage, rent, audit costs, and other general charges. These costs account for 11% of the FY 1998 budget. Combining mandatory costs with salaries and benefits results in a budget in which 80% is allocated to meet pay and other mandatory requirements, leaving only 20% available for non-pay use.

Strategic Plan Goal 1: Increase Knowledge. This goal represents about 32% of the actual FY 1998 Federal budget across the Institution. Approximately 17% of the budget is included for scholarly research and 15% is included for collections management. Examples of scholarly research include the activities of the Smithsonian Astrophysical Observatory (SAO), the Smithsonian Tropical Research Institute (STRI), and the Smithsonian Environmental Research Center (SERC). Included at SAO, in addition to the Multiple Mirror Telescope in Arizona and the array of submillimeter wavelength telescopes in Hawaii, are the design, instrumentation, and operation of the Chandra X-ray Observatory, and design and development of the Infrared Array Camera for NASA's Space Infrared Telescope Facility. STRI's base provides for fundamental research on the ecology, physiology, evolution, and behavior of plants and animals in the tropics, including humans, with emphasis on the relationship of tropical organisms to global climate change. Main areas of research emphasis include plant physiology and carbon dioxide studies, tropical forest canopy biology, and tropical marine ecology. At SERC, research on effects of increased carbon dioxide on plants shows how global change in the atmosphere is affecting marshes. SERC is also a national center for research on introduced marine species, which are invading coastal ecosystems at unprecedented rates throughout the world. In 1998, SERC worked with the U.S. Coast Guard to establish the National Ballast Water Information Clearinghouse.

Also included under research are significant portions of the base budgets for scientific staff and their research activities at the National Museum of Natural History (NMNH), the National Zoological Park (NZP), and the National Air and Space Museum (NASM). In order to provide context for issues such as global change and biological diversity, NMNH's research emphasizes both historical and contemporary approaches. NMNH researchers publish over 600 papers per year, and an increasing amount of this information is disseminated through public programs. At NZP, physiologists continue to document the reproductive cycles of threatened species using noninvasive endocrine monitoring techniques. The Zoo also maintains the Conservation and Research Center as a major facility for endangered species propagation, conservation, training and research. At NASM, historical research has resulted in improved documentation and updated information on the archival collections. Oral and video history interviews are held with pioneers in aviation and space. Published scientific results range from the use of remote sensing in conservation monitoring in Brazil to the formation of volcanoes on Venus.

Other Smithsonian museums fund research activities in the humanities (history, art, anthropology, and culture) from their base funds, leading to publications, exhibitions, and public programs. Examples include the first new biography in 50 years of famed

Civil War photographer Mathew Brady, written by a National Portrait Gallery historian who sheds new light on Brady's influence on American photography and cultural life. An art historian at the Freer Gallery of Art has teamed up with a Chinese archaeologist to produce the first comprehensive study of the origin, uses, and cultural significance of Chinese jade. The Archives of American Art, the largest single source of primary documents on the history of the visual arts in the United States, is collecting major source materials on Latino American and African American art that will generate new research on the nation's diverse art traditions that together shape contemporary American art. Researchers at the National Museum of the American Indian (NMAI) are examining new collections acquired from New York's Heye Foundation in preparation for the opening of the new NMAI museum on the Mall. And scholars at the Anacostia Museum, utilizing collections, archives, and library materials, are engaged in the first broad-scale study of the roots of African American dance.

Funding for collections management includes the care, cataloging and conservation of the collections at a wide range of Smithsonian units. For example, the Archives of American Art is working toward its goal of increasing accessibility to collections by completing several projects such as the processing and microfilming of the Rockwell Kent papers. In 1998, the Cooper-Hewitt, National Design Museum added more than 535 objects to the collection, while loaning 124 objects to a variety of institutions for exhibition, conservation and study purposes. The Hirshhorn Museum began using The Museum System, a new database developed in collaboration with other Smithsonian art museums with Web interface to allow access to collections information and images by the public. NASM has selected and installed the same system. At the National Museum of American History, asbestos abatement in a storage building at Suitland was completed, with over 100,000 objects decontaminated and relocated in preparation for the building's renovation. NMAI prepared equipment specifications for labs and collections storage for the new Cultural Resources Center, completed a pilot move of 16,000 objects successfully, began the conversion of a new collections database, and undertook an inventory and assessment of the collection's physical condition. NMNH continued the move of specimens to the Museum Support Center, and stabilized and labeled the insect collections in preparation for the move to the new storage area in the East Court building. The Smithsonian Institution Libraries added over 6,000 records to the online index and finding guide to the literature of African arts and culture. The Smithsonian Institution Archives created a disaster recovery plan for the Archives, prepared over 2,000 cubic feet of records for transfer to an off-site location, and undertook restoration of the papers of James Smithson.

Strategic Plan Goal II: Diffuse Knowledge. About 15% of the Institution's FY 1998 Federal budget was applied toward this goal. Exhibitions and public programs are included in this category and cover such activities as traveling exhibitions, gallery tours and demonstrations, theatrical presentations, film and video screenings, symposia, lectures, festivals, and community outreach programs. Included are traveling exhibitions provided through the Smithsonian Institution Traveling Exhibition Service and related educational packages (interactive computer programs, film and video components, sound tracks, and curricula and interpretive tools). The Freer Gallery is developing and

implementing over 20 exhibition changes over the next several years. The National Museum of American Art is continuing its largest outreach project, *Save Outdoor Sculpture!*, with a goal of preserving 10,000 sculptures for the new century. The National Museum of American History website receives millions of hits, and has received a national award for an interactive program; in addition, an innovative new virtual display provides access to the Museum's holdings. At the National Museum of Natural History, the Natural Partners program, which is developing electronic programming to increase public access to the Museum's collections and research activities, produced seven electronic field trips including three from the Amazon rainforest. The National Portrait Gallery presents living history performances in conjunction with its exhibits, and is working on plans for touring exhibitions from the permanent collection while the museum building is closed for renovation.

Also included under this goal is a wide range of educational activities in every museum and research institute of the Institution as well as the programs of the Smithsonian Office of Education, the Office of Fellowships and Grants, the Center for Museum Studies, and the National Science Resources Center. Examples of education efforts in museums and research institutes include the expansion of school outreach efforts at NASM to include pre-visit guides for several major exhibits. The NZP's diverse educational efforts include student and professional training programs, research lectures, public lectures, special events, and dissemination of information through the Internet. SAO has worked on a discovery-based elementary school curriculum using astronomy as a unifying theme, as well as on middle school curricula relating to engineering designs and communications technology. The Education Forum at SAO is one of four major centers for space science education established by NASA. The Smithsonian Center for Materials Research and Education developed an interdisciplinary high school curriculum in arts and materials technology entitled Science Teaching Art Teaching Science (STATS). This involves developing a full-year art/science curriculum for secondary and undergraduate classrooms. The new Reed Education Center at the Smithsonian Environmental Center allows SERC to expand its public offerings to regional school groups, to conduct workshops for teachers, to provide public lectures, and to expand innovative educational offerings to diverse constituencies.

The Smithsonian Office of Education (SOE) works in collaboration with the museums and research institutes to advance the Smithsonian as a national resource for educators through print and electronic publishing, professional development for teachers, and museum/school partnerships. SOE is also developing a Smithsonian-wide education area on the Web. The Center for Museum Studies offers courses and seminars, internships, and information and advisory services to the museum community. The National Science Resources Center supports systemic science education reform efforts through development and dissemination of information on high-quality science curriculum materials, and annual conferences to provide science education leadership development and technical assistance to schools across the nation.

Strategic Plan Goal III: Support for the Increase and Diffusion of Knowledge. This goal includes the Institution-wide support activities of the Smithsonian and required approximately 53% of the Institution's budget in FY 1998. About 16% of the budget was required for administration, 26% for facilities, and 11% for safety and security. Administration activities include the executive management and related functions provided by the Offices of the Secretary, Under Secretary, and Provost. Included are Institution-wide audit, accounting, procurement, human resources, planning, management analysis, and budgeting functions. In support of the day-to-day operations of the Institution are the activities of the General Counsel, government relations activities, including liaison with Federal agencies and state and local governments, central computing and telecommunications services, and communications with the public.

Facilities activities include the Office of Facilities Services and the Office of Physical Plant, which administer, maintain and repair the Institution's buildings and grounds, and provide utilities, transportation, mail services, exhibit renovation, and many other related services. Also included under this goal are the safety and security activities of the Office of Environmental Management and Safety and the Office of Protection Services, which provide round-the-clock security for all Smithsonian facilities in the Washington DC area as well as the Smithsonian Environmental Research Center, the Cooper-Hewitt, National Design Museum, the National Museum of the American Indian facilities in New York, and the Smithsonian Tropical Research Institute in Panama.

II. FY 2001 REQUEST
B. Request Detail

Scenario 1
FY 2001 Freeze Level

To make the wisest use of Federal funds available under this scenario, the Smithsonian would reduce the funding level for construction by $12,500,000 in order to make available an additional $8,400,000 for salaries and expenses and $4,100,000 for critical repair, restoration, and alteration projects, as shown below.

	FY 2000 Request to Congress	FY 2001 Freeze Level	Change
Salaries & Expenses	$380,501,000	$388,901,000	$8,400,000
Repair, Restoration, and Alteration	47,900,000	52,000,000	4,100,000
Construction	19,000,000	6,500,000	-12,500,000
Total	$447,401,000	$447,401,000	0

Salaries and Expenses. In order to arrive at the FY 2001 S&E total of $388,901,000 under Scenario 1, the starting point would be the S&E FY 2000 base of $380,501,000, to which would be added the mandatory increases needed to sustain base operations, totaling $15,791,000 and summarized below.

FY 2000 S&E base	*$380,501,000*
Mandatory increases	
• FY 2000 pay raise annualization	2,709,000
• Pay raise for FY 2001	7,669,000
• FICA	265,000
• Health insurance	470,000
• Panama Treaty pay annualization	319,000
• Workers' Compensation	138,000
• Utilities and postage	1,389,000
• Communications	459,000
• Rental space	2,373,000
Subtotal, mandatory increases	*15,791,000*

To offset these required costs, the FY 2000 base would be reduced by certain non-recurring costs, mandatory costs offsets, and by the cost of a staff furlough, amounting to $7,391,000 and listed below.

Offsets	
• Non-recurring costs	-1,100,000
• Mandatory costs offsets	
• Compensatory workday	-944,000
• Utilities–DC water	-1,465,000
• Utilities–Electricity/steam	-300,000
• Furlough most of staff for 3-4 days	-3,582,000
Subtotal, offsets	*-7,391,000*
Total FY 2001 S&E Request at freeze level	*$388,901,000*
Total FY 2001 RR&A Request at freeze level	*$52,000,000*
Total FY 2001 Construction Request at freeze level	*$6,500,000*
Total FY 2001 Request at freeze level	**$447,401,000**

a. Projected Effect of Freeze on FY 2001 Performance Goals

The furlough of most Smithsonian employees (except for a minimal level of facilities and security staff) for 3-4 days would significantly affect all activities of the Institution. Museums would be closed to the public; scheduled public programs, such as lectures or symposia, would be cancelled and might not be able to be rescheduled (depending upon the availability of participants); and research would be interrupted, which could compromise outcomes in some cases.

The two performance goals that would specifically be most affected by this scenario are II.1, *Provide new and updated exhibits that serve a wider audience,* and III.3, *Maintain, preserve, and upgrade the quality, condition, and security of facilities.*

II.1. Provide new and updated exhibits that serve a wider audience. In order to allow for at least a limited opening of the new National Museum of the American Indian Mall Museum, it might be necessary to delay completing the move of all the collections objects from New York to the Cultural Resources Center in Suitland. The number of exhibit halls opening on time in the new Mall Museum could also be affected. At this freeze level, the preparation of objects for the move from Suitland to the planned National Air and Space Museum Dulles Center would be held to the base level, which would prolong the move schedule and could affect the opening of the Center.

III.3. Maintain, preserve, and upgrade the quality, condition, and security of facilities. Funding at this level in the Repair, Restoration, and Alteration account would mean that essential renewal work would continue to be deferred in several Smithsonian buildings which are in the most serious condition. In addition, this funding level would result in delaying needed modifications and improvements required to maintain the vitality and operating effectiveness of Smithsonian programmatic activities. Deferral of

$10,000,000 in renewal work at the Patent Office Building in FY 2001 will extend the construction period an additional year. The building will therefore remain closed to the public longer, and will continue to deteriorate, and project costs will increase by several million dollars due to escalation and additional collateral damage to the building. Further, renovation of the Arts and Industries and Smithsonian Castle buildings will also each be delayed by a year, escalating those costs and allowing further deterioration to occur in those buildings as well.

A reduction in planned funding for alterations and modifications will further delay changes and improvements to existing space that are needed to accommodate current and planned programmatic activities. The Institution has a growing backlog of requirements since new funding for these programmatic changes has not been available since FY 1997. These include preparing for exhibit hall reinstallation in the National Museum of American History, the National Museum of Natural History, and the National Zoological Park; providing or modifying research space at Smithsonian research centers outside of the Washington DC area; and improving collection storage space at the Hirshhorn Museum and in several Smithsonian Institution Library locations. Further delay contributes to continued operating inefficiencies and hampers efforts to achieve the Institution's goals in these areas.

Scenario 1. FY 2000 Freeze Level (continued)

b. Justification of Mandatory Increases for Sustaining Base Operations

Personnel

Necessary Pay and Benefits. **$10,488,000** is requested for higher projected salary and benefits costs in FY 2001 for staff as described below.

- **Annualization of FY 2000 Pay Raise. $2,709,000** to annualize the costs of the 4.4 percent January 2000 pay raises.

- **Proposed FY 2001 Pay Raise. $7,669,000** to fully fund the anticipated 4.8 percent January 2001 pay raises for three-quarters of a year.

- **FICA. $265,000** to cover the Institution's increased costs under the Federal Insurance Contribution Act.

- **Health Insurance. $470,000** to cover the Institution's increased costs of employee health insurance.

- **Compensatory Workday ($944,000).** Base funding is currently available for employee compensation for a 261-day work year based on a 2,088 hourly rate calculation. Because FY 2001 contains 260 compensable days, the Institution is relinquishing $944,000 for employee salaries and benefits costs.

- **Panama Treaty Implementation: Pay Annualization. $319,000** is requested to support the increase in operating costs at the Smithsonian Tropical Research Institute (STRI) in Panama resulting from implementation of the 1977 Panama Canal Treaty. Under the treaty's terms and conditions, the United States will turn over responsibility for the operation of the Panama Canal and its related facilities to the Republic of Panama on December 31, 1999. STRI is authorized to continue its tropical research mission there for 20 years beyond 2000 under a 1997 agreement with the Republic of Panama that is renewable for another 20 years. In the year 2000, the labor laws of Panama will become applicable to locally hired employees of STRI, which will have to make changes to its personnel system in order to comply with these laws. An amount of $319,000 is required in FY 2001 to annualize the cost to STRI of adjusting to the local employment system of Panama.

Workers' Compensation. **$138,000** is required as specified in the provisions of Section 8147(b) of Title 5, United States Code, as amended April 21, 1976 by Public Law 94-273. The FY 2001 bill for the Institution's Federal portion ($2,122,000) covers the actual expenses incurred for the period July 1, 1998 through June 30, 1999. With an amount of $1,984,000 in its FY 2000 base for workers' compensation, the Institution requests an additional $138,000.

Utilities, Postage, and Communications. A net decrease of **$83,000** is requested for utilities, postage, and communications in FY 2001 to cover additional costs attributable to increased consumption and projected rate increases. The following table displays estimates from FY 1999 through FY 2001. Detailed explanations of each line item follow.

Federal Utilities, Postage, and Communications Costs
FY 1999–FY 2001

(Dollars in thousands)	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate
Electricity	11,007	11,451	11,842
Steam	3,238	3,412	3,531
Gas	1,612	1,654	1,803
Fuel Oil/Water	400	454	468
DC Gov't Water/Sewer	2,055	5,139	3,941
Postage	2,250	2,317	2,466
Communications	8,697	9,359	9,818
Total	29,259	33,786	33,869
Base	29,259	33,786	33,786
Surplus/(Deficit)	0	0	(83)

Electricity. A major component of the utilities account is electricity. In addition to lighting and office equipment, electricity powers the machinery that provides cooling for Smithsonian buildings. A vigorous energy management program has allowed the Institution to maintain consistent electrical consumption levels throughout most facilities. The most significant element of the program is the installation of automated central controls on most building systems that limit consumption during high-use or high-rate periods and during unoccupied hours.

Electrical energy consumption will increase due to the initial start-up of the National Museum of the American Indian as it nears completion, and as preparation of the inaugural exhibitions proceeds. Remote sites with new facilities will also require increased electricity, such as the lab modules at the Smithsonian Environmental Research Center in Edgewater, Maryland. An inflation factor of 3% has been included in the FY 2001 estimate.

These needs are offset in part by a reduction of electrical consumption at the Patent Office Building in FY 2001 resulting from the relocation of its occupants during the major capital renewal project for that facility.

Steam. Steam is used primarily for heating Smithsonian facilities on the Mall and in New York, year-round humidification, and hot water production. Maintaining an interior environment conducive to the preservation of artifacts requires large steam

consumption. Because of new metering techniques used by the General Services Administration, the Institution anticipates steam consumption remaining at current levels. The FY 2001 estimate includes a 3% inflation factor.

These needs are offset in part by a reduction of steam consumption at the Patent Office Building in FY 2001 as a result of the relocation of its occupants and collections during the major capital renewal project for that facility.

Natural Gas. Natural gas costs will increase when the boilers at the National Museum of the American Indian are brought on line to heat the facility. The FY 2001 estimate also reflects a 3% inflation factor.

Fuel Oil/Water. Because natural gas is used as the primary heating and cooling fuel in most facilities, fuel oil is now used as a back up heating fuel. No increase in consumption is expected. It is anticipated that water consumption at satellite facilities in Maryland and Virginia will remain constant. The FY 2001 estimate includes a 3% inflation factor.

DC Government Water/Sewer. The FY 2001 estimate for water and sewer costs levied by the District of Columbia Government is based on cost projections provided by the District in 1999. The estimate includes a 5% rate increase to be effective in 2001 and an anticipated increase in water consumption resulting from the completion of the National Museum of the American Indian.

These needs are offset in part by the funds anticipated in FY 2000 for one-time costs to cover deferred charges for FY 1997-1999 based on the 42% rate increase that became effective in FY 1997.

Postage. The FY 2001 estimate reflects a 3% adjustment to cover the cost of an anticipated increase in volume for the Institution and the increase in costs associated with the National Museum of the American Indian.

Communications. The FY 2001 estimate for communications includes funds to support inflationary increases in voice and data communications and infrastructure and to support services in new facilities at the Smithsonian Tropical Research Institute and the National Museum of the American Indian.

Rental Space. $2,373,000 is requested for necessary rental increases in FY 2001 as described below.

Central Rent. **$1,463,000** is requested for increased expenses in the central rent account. Leased space in the Washington DC, New York and Boston areas provides critical collection housing and storage, as well as space for the Institution's exhibition, education, research, and administrative offices. The request reflects projected cost increases in base rent, operating and real estate charges. The increase includes $575,000 for the annualization of leased swing space for occupants of the Patent Office

Building (National Museum of American Art and National Portrait Gallery), and a projected inflationary increase of $888,000 for the rental of office and storage space for Federal activity in the Washington DC area.

The following table reflects projected costs for Federal central rental space for FY 1999 through FY 2001.

Federal Central Rental Costs
FY 1999–FY 2001

(Dollars in thousands)	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate
Office Space	3,259	3,455	3,897
Warehouse Space/Other	2,974	3,152	3,598
NMAA/NPG Relocation	--	1,700	2,275
Total	6,233	8,307	9,770
Base	6,233	6,233	8,307
Surplus/(Deficit)	0	(2,074)	(1,463)

National Museum of the American Indian (NMAI). $744,000 is required to pay General Services Administration (GSA) costs for the NMAI George Gustav Heye Center (GGHC) in New York. The amount required in FY 2001 for the Heye Center is based on GSA's new pricing methodology for the rental of space. The Institution has also learned that an amount of $720,000 will be required for the Heye Center in FY 2000.

Smithsonian Astrophysical Observatory (SAO). $166,000 is requested for increased costs of rent for SAO operations in Cambridge, Massachusetts. This amount is necessary to cover uncontrollable rental increases of existing space at Cambridge facilities.

c. Explanation of Non-recurring Costs

The net decrease of $1,100,000 in non-recurring costs includes decreases of the following for one-time costs not required in FY 2001: $1,000,000 for Museum Support Center (MSC) equipment, $800,000 for the National Museum of Natural History (NMNH) East Court relocation, $650,000 for the Office of Protection Services (OPS) security system modernization, and $1,100,000 for the MSC move.

The Institution requests that these funds be provided in FY 2001 as follows: $1,800,000 for minimal costs required to prepare for the opening of the National Museum of the American Indian Mall Museum (NMAI), and $650,000 for OPS for maintenance and renewal of the Smithsonian Institution Proprietary Security System.

Under Scenario 3, the Institution is also requesting $1,100,000 for costs related to the move of collections for NMAI.

National Museum of the American Indian (NMAI) ($1,800,000). The amount requested, which is to remain available until expended, is the minimal amount that will be required in FY 2001 to continue research and development and begin production of inaugural exhibitions, and to provide essential furnishings and equipment required to meet the Mall Museum opening schedule.

- **Mall Opening ($1,800,000)**

  Exhibitions. **$1,300,000** is requested to begin production and fabrication of exhibitions at the Mall Museum as required to meet the opening schedule. Non-appropriated Trust funds are also being raised for exhibition costs.

  Cultural Resources. **$250,000** is requested to continue the curatorial research and development of the Mall exhibitions and to support the acquisition of contemporary objects and art for the Mall exhibitions. As NMAI's collection is largely historic in nature, acquisition ($50,000) of these contemporary items would significantly contribute to the exhibitions' recognition of the continuing vitality of Native cultures.

  Furnishings, Equipment and Technology. **$250,000** is requested for essential furnishings and technology needs as the building is being constructed and early occupancy is obtained. Funding will provide for design, prototyping and partial development of the communications and network control systems ($125,000). Remaining funds will support construction and partial equipping of the exhibits workshop in the lower level of the building ($125,000). This workshop, when completed, will include woodworking, welding, and painting equipment, a forklift and other lifts, and carts and cabinets needed for the initial move and installation of artifacts in the exhibits.

Security System Maintenance and Renewal ($650,000). Redirection of non-recurring costs for expenses relating to the Institution's Proprietary Security System and additional security requirements is requested in order to fund on-going maintenance and renewal of the system. Maintenance of the system will include software upgrades, technical inspections, cleaning, repairs on front-end equipment (computers, switchers, and monitors), field devices, and data-gathering panels. The cost of servicing just the Natural History building—the Institution's largest—has been estimated at $100,000 per year. Renewal costs include replacing installed equipment because of equipment failure, life-cycle termination, changes in technological approach, or additional requirements placed upon the system, such as new exhibits or alarms. Hardware renewal is based on a three-to-five-year life cycle. Wiring renewal is based on a 10–15-year life cycle. Renewal estimates prorate installation costs over the item's entire life cycle, beginning two years after installation. Since the installation program is phased over a four-year time period, the renewal costs are expected to stabilize after four years. In FY 2002 and beyond, maintenance and renewal costs become the primary funding need, but will remain stable at approximately $2,000,000.

Scenario 1. FY 2000 Freeze Level (continued)

d. Justification of Repair, Restoration, and Alteration of Facilities and Construction

Performance Goal #III.3. Maintain, preserve, and upgrade the quality, condition, and security of facilities.

Repair, Restoration, and Alteration of Facilities ($52,000,000). In order to continue improving the conditions of the Institution's buildings, the Smithsonian is requesting $52,000,000 for FY 2001 at the freeze level for repair, restoration, and alteration (RR&A) of facilities. The FY 2001 estimate for this account includes repair and restoration of all Smithsonian facilities, including the National Zoological Park, as well as alterations and modifications.

The Institution is responsible for over 400 buildings which comprise more than 6.6 million square feet of space, and range in age from new to over 150 years old. These buildings, including many visible and valuable structures, provide not only space for the Institution's programs and activities, but also provide safe storage for irreplaceable collections made accessible to millions of scholars and visitors each year. Included are 15 museum and gallery buildings as well as restoration and storage buildings, centers for research and education, and a zoological park. Insufficient funding in prior years for repair and renewal has resulted in continued deterioration of many of these facilities.

The RR&A requirement for FY 2001 at the freeze level includes

SI locations (excluding Zoo)		$42,000,000
National Zoological Park		10,000,000
	TOTAL	**$52,000,000**

Assessment of Facility Conditions. Building systems and components have limited life expectancies. Despite planned preventive maintenance and repair efforts, their heavy and constant use exacerbates the natural aging process of components. As building systems age, the risk of operational failure, unscheduled closings, and damage to collections increases dramatically. In addition, aging systems require increasingly frequent maintenance and repair, which drives up costs. Eventually, systems reach the breakdown mode of operation. Once a system has reached this stage, it can no longer reliably support activities housed in the building. In the case of museum mechanical systems (heating, ventilation and air conditioning) or roofs, this usually means that the continuous close control of environmental conditions and protection from the elements required to preserve collections cannot be guaranteed. Damage to any of our collections (especially artwork) due to leaks or other environmental failures would seriously threaten our ability to obtain new gifts from donors or loans from other museums. In addition, it costs as much as five times more to achieve this minimally acceptable performance through breakdown maintenance—that is, repairing or replacing system components on an emergency basis when they fail. Resources spent

to patch existing systems are essentially wasted when the systems later require full replacement. More importantly, because of the Institution's high public visibility and nearly 30 million annual visits, the potential for irreparable damage to the collections and unplanned system failures is a major concern. When a system has deteriorated to the breakdown point, major renewal or replacement is the only way to regain acceptable performance.

The Institution has carefully inspected its facilities and analyzed the current condition of its buildings. Parameters used to assess existing conditions are watertight enclosure; age and condition of heating, ventilating and air conditioning (HVAC) and electrical systems; and compliance with current codes and industry operating standards. With this information, the staff determines the remaining life of building systems and components and estimates repair or replacement requirements to keep each building operating at an acceptable performance level.

Two of the Smithsonian's major buildings, the National Museum of Natural History and the Patent Office Building, have already reached the breakdown stage. Two more buildings, the Arts and Industries Building and the Smithsonian Institution Castle, as well as many buildings at the National Zoological Park's Rock Creek and Front Royal sites, are rapidly approaching this stage. Together, these four buildings and the National Zoological Park properties represent over one-third of the Institution's usable area and contain large amounts of public space.

The most significant deficiencies at these facilities are antiquated and failing mechanical and other utility systems, but a number of modifications are also required to meet life safety and accessibility codes. The Institution plans to invest the majority of its RR&A resources over the next five years in restoring these facilities to an acceptable performance level.

While maintaining an emphasis on restoring these buildings, the Smithsonian's other facilities require constant work to maintain the currently acceptable performance level. Timely attention to deficiencies prevents further deterioration and allows the Institution to take a proactive approach to sustaining the viability of its physical infrastructure.

FY 2001 Request. The Institution requests a funding level of $52,000,000 for FY 2001, which includes $10,000,000 for the National Zoological Park. Within this freeze level, no more than $2,000,000 will be used in FY 2001 for alterations and modifications to facilities to meet programmatic requirements. Funding at the freeze level will allow the Institution to make partial progress toward the timely renewal of some of the most deteriorated buildings, and to make a portion of the ongoing repairs required to maintain current conditions in the newer buildings.

The Smithsonian expects to use the funds requested in FY 2001 to perform work in the categories described below. The chart following this narrative provides a summary of projected expenditures by category of work for FY 2001–FY 2005, and the Appendix contains more detailed information about planned repairs in each facility. The Institution

contracts for most RR&A projects unless it is more cost effective to use existing employees or to hire temporary staff to accomplish the work. The National Zoological Park also contracts for certain ongoing maintenance services with funding in the RR&A account. The account also funds expenses required to accomplish the RR&A work, such as security requirements or relocation of staff and collections that might be placed at risk during construction.

Major Capital Renewal ($24,280,000). This category includes the cyclical replacement of major building systems and equipment and major renovation required to ensure long-term preservation of the buildings. Projects in this category differ in magnitude, expense, and planning complexity from routine ongoing restoration work, repair projects, or replacements undertaken when a piece of equipment fails. Work in this category primarily addresses the major replacement requirements for HVAC and electrical systems at the Institution's older facilities where these and other critical building systems are nearing the end of their useful service lives. The National Museum of Natural History, Patent Office Building, Arts and Industries, and Smithsonian Institution Castle Buildings are all now in need of major capital renewal.

Projects in this category involve complete replacement of HVAC, electrical, and plumbing systems, and restoration or replacement of exterior components such as facade, roof, and windows to ensure long-term operation and preservation of the building. Modifications to the building also improve energy efficiency, meet fire detection and suppression requirements, and correct hazardous conditions. By combining these kinds of tasks into a single project, the Institution saves money and avoids repeated disruption to activities in the building. The Smithsonian achieves operating efficiencies as well by designing new building systems and components to work together. For example, by installing multiple-paned windows and increasing insulation, the Smithsonian can select more energy-efficient heating and cooling equipment. The equipment costs less to purchase and install, and long-term operating costs are lower. The impact of renovation work on programmatic activities is a key factor in planning a major project. Work of this magnitude causes serious disruption to activities in the building. The Institution must relocate staff and collections from the areas under construction to prevent damage, allow staff to continue working during the construction period, and ensure safety and, when possible, continued public access. Major capital renewal projects are phased over a number of years to achieve the most efficient balance of cost savings while minimizing disruptions to public programs and staff activities.

The current condition and planned renewal of facilities is summarized below and additional information on the planned renewal projects is contained in the Appendix.

- ***National Museum of Natural History (NMNH) ($10,655,000).*** The main building was constructed between 1904 and 1911, with the wings added in 1960-1964 and the east and west courts in 1998 and 1999. The Smithsonian's largest building in terms of area at 1.56 million square feet, the building houses one of the Institution's most popular museums, with vital exhibits and educational programs and a unique

and extensive collection of natural history specimens and artifacts. NMNH—with its laboratories for staff and visiting scientists—is also one of the leading international centers for research on natural history and anthropology.

Based on a master implementation plan completed in 1987, the Institution has begun a comprehensive renovation program in the building which will replace the HVAC equipment, ductwork, electrical equipment and wiring, piping systems, and the roof and windows of the main building. Asbestos and lead will be abated or encapsulated; the fire protection, storm water, communication, alarm, and emergency power systems will be upgraded; storm water systems and a hazardous chemical control facility will be installed; and the Museum's main entrance on the Mall will be made accessible to persons with disabilities. Progress to date includes replacement of the central cooling plant and emergency generator, asbestos abatement in the attics and mechanical spaces, construction of new rooftop mechanical rooms, replacement of the windows in the wings, some elevator and communications upgrades, rotunda restoration, and interior renovation of about one-third the space in the east wing. The recent completion of the East Court building, inside a former courtyard of the building, provides additional space in the building in which to relocate collections and staff activities displaced by the building renovation. The Institution has used $49,400,000 provided to date for this work. An estimated $80,000,000 will be required to fund this incremental renewal program over the next ten years.

- ***Patent Office Building ($7,000,000).*** Built between 1836 and 1868, the building houses the National Museum of American Art, the National Portrait Gallery, and the Archives of American Art in 332,700 square feet of space. The Patent Office Building was last renovated in the 1960s. Most of the existing mechanical and electrical systems in the building were installed at that time and are now over 30 years old. The rate and magnitude of emergency repairs that must be made, especially to the HVAC systems, have accelerated in the last several years. For example, the Institution had to shut down the HVAC system for almost two months in spring 1998 to replace about 200 inoperable valves in the distribution piping. The effects of this closure included a serious disruption of museum activities, as well as a significant expenditure to fix a system that will be totally replaced within two years. Later in 1998, water leaked into a collection storage room, and flooding from rusted piping required an exhibition gallery to be closed and works of art removed.

  The Smithsonian plans a renewal program in the building that will replace the HVAC, electrical, plumbing, and other utility systems, as well as upgrade fire protection and communications systems, replace the windows, restore the elevators, abate hazardous materials, and create accessible entrances and restrooms. The roof is currently being replaced with previously appropriated funds. The Institution is designing a comprehensive renovation of the building, at a total estimated cost in the range of $110,000,000–$120,000,000. A more definitive estimate of costs will be available in late 1999. The $60,000,000 included in the five-year RR&A program is for system renewal, and safety and accessibility modifications to the building.

Improving the building's functionality, enhancing space for public programs and education, and preserving the historical integrity of this landmark building are additional costs. The Institution plans to begin the work in the spring of 2000. The project plan had been to complete the work over three years. As indicated, the funding amount at the freeze level will result in adding an additional year to complete this project.

- ***Arts and Industries Building ($2,000,000).*** Originally designed to house the rapidly growing National Museum, the Arts and Industries Building was started in April 1879 and completed in March 1881. The building provides about 168,000 square feet of exhibit and administrative space. The last major renovation of the HVAC system took place in the 1970s. The HVAC equipment, electrical and other utility systems are now nearly 30 years old, and break down with increasing frequency. Because the Smithsonian cannot obtain new parts for some of the equipment that is no longer manufactured, costly fabrication of replacement parts is required in order to keep the systems running.

  The Institution plans to replace the mechanical, electrical, plumbing, fire protection, elevator, and communications systems in the building, make modifications to ensure compliance with the Americans with Disabilities Act (ADA), abate or encapsulate asbestos and lead paint, and restore the interior to reflect its original architecture. The Smithsonian is currently designing the project, and the amount of $2,000,000 in the FY 2001 request will complete design of the renewal project.

  Chiller Plant. As part of the Arts and Industries renewal project, the Institution plans to replace the chiller plant that serves that building and the Castle with an energy-efficient chiller plant that will serve all the buildings on the South side of the Mall. The chiller plants in these buildings are all nearing the end of their useful lives, and use chlorofluorocarbon refrigerants (CFCs) which the Environmental Protection Agency has ruled should be eliminated.

  A study has shown that a central chilled water plant would help manage CFCs, as well as provide energy savings through its highly efficient equipment. The benefits of the new plant would include enabling the Institution to free up for other uses space within the museums now occupied by antiquated equipment, accelerating the renovation projects for the Arts and Industries Building and the Castle, meeting environmental requirements, and realizing energy savings as recommended by Executive Order 13123, *Greening the Government Through Efficient Energy Management*.

  The staff has discussed construction of a consolidated chiller plant beneath the sculpture at the west end of the National Air and Space Museum with the staff of the National Capital Planning Commission and the Commission of Fine Arts, and both have informally endorsed the idea, since it would reduce the visual impact of equipment now in several buildings on the National Mall. The Smithsonian is currently exploring third-party financing through a utility company for construction of

the chiller plant, and hopes to work with OMB in the early stages of project development through the passback process to put together a viable package.

- ***Smithsonian Institution Castle.*** The Institution's first building is now nearly 150 years old. The 104,000-square-foot building, which houses visitor orientation and administrative functions, was last renovated between 1968 and 1970. The mechanical (HVAC), electrical and other utility systems are near the end of their normal lifespans, and are subject to continual breakdown and require frequent manual operation. Replacement parts are difficult and costly to obtain. Leaks from mechanical equipment have caused deterioration of interior surfaces, as well as ongoing mold problems, and have damaged files and carpeting. The HVAC system cannot meet the current heating and cooling loads in the building, and the communications system is inadequate to meet the needs of the activities in the building. The building's elevators are antiquated and require frequent repair, and many spaces do not meet ADA requirements. The emergency lighting system is outdated and does not function effectively. In the basement, low hanging wires and pipes in passageways used by staff moving between the Arts and Industries Building, the Castle, and the Quadrangle Building are a hazard.

  The Smithsonian plans to renovate the building to replace the mechanical, electrical, plumbing, and communications systems, overhaul the elevators, abate or encapsulate asbestos and lead paint, and make ADA-related modifications. During renovation, the Institution will also install sprinklers in the Great Hall. Although funding for this project is not included in the FY 2001 request, the Smithsonian will use funds expected in FY 2000 to do programming and conceptual design.

- ***National Zoological Park.*** The National Zoological Park operates on two separate properties in Rock Creek Park and Front Royal, Virginia. The Rock Creek property includes 167 acres acquired in 1889, and is the public home of the live animal exhibits and educational programs as well as vital animal care and research activities. The first buildings were built in 1892. There are now over 23 major buildings on the site totaling 750,000 square feet.

  Rock Creek ($3,525,000). A number of buildings at Rock Creek are currently below the acceptable performance level. As major components of the building systems age, the risk of operational failure, unscheduled closings, and danger to the animal collections and research efforts increases dramatically. The Australia Building has a number of structural deficiencies, the HVAC system is in poor condition and breaks down often, and the electrical system is obsolete and difficult to repair. The Bear Exhibit is also experiencing structural failures, leaks, a failing HVAC system, and inadequate electrical and animal containment systems. Deficiencies at the Mane Building, which houses the primary restaurant facilities at the Park, include rotted exterior siding, a leaking roof, failing HVAC system, and inadequate electrical system. The Elephant House roof leaks, the HVAC and hot water systems fail frequently, the electrical capacity and distribution is inadequate, and the building does not have a fire- and life-safety system. The Property Yard and Valley Keeper

areas have deteriorating roofs and structural deficiencies. The Holt House structure is failing, the HVAC system is no longer operable, and the electrical system has been disconnected due to fire hazard. Several other buildings barely meet a minimum acceptable performance level, including the Reptile Building, Deer and Tapir Building, and Seal/Sea Lion Exhibits. In addition to outdated utility systems and failing exterior structures of individual buildings, basic infrastructure deficiencies include antiquated and inadequate central utility service capacities and distribution systems, obsolete fire alarm and smoke detection systems, practically nonexistent central monitoring of animal life support systems (such as water treatment and climate control), and deteriorated roadways and bridges.

The National Zoo will use the FY 2001 funding to begin renewal of the buildings with the most serious deficiencies, and to design bridge and road repairs at the Rock Creek property.

Front Royal ($1,100,000). The Smithsonian acquired the 3,150-acre Front Royal property from the U.S. Army in 1974 to house the National Zoological Park's Conservation Research Center. The first buildings date from 1910-12, with the majority constructed in the 1930s. The Smithsonian renovated some of the buildings and added a veterinary hospital in the 1970s. Today, the property has more than 89 buildings ranging from animal shelters to research laboratories and residences, totaling about 250,000 square feet of space. The site is served by two and one-half miles of roads and 20 miles of jeep trails, and is secured by 30 miles of fencing. Water, electrical power, and storm piping are largely centralized, but are distributed to more remote areas of the property as well. The Conservation Research Center is a major facility for endangered species propagation, conservation, training, and research.

The Institution is evaluating the condition of the buildings and infrastructure components at Front Royal. Once this is complete, the staff will develop a long-range plan to correct deficiencies. Of immediate concern, however, is replacement of several badly deteriorated maintenance buildings with a single consolidated facility. Several of the buildings that house maintenance shops and equipment—in actuality not much more than sheds scattered around the property—are in such bad condition that they are no longer safe for use. The Smithsonian will use the FY 2001 funding to begin design and replacement of a consolidated facility that will allow maintenance activities to be conducted in a safe environment.

Code Compliance and Security. This category includes projects included in the Fire Detection and Suppression, and the Access, Safety and Security categories. The majority of this work is accomplished by contract, with a small amount of work accomplished by existing employees or temporary staff when appropriate and cost-effective. The amounts indicated represent current planning estimates for each subcategory.

- ***Fire Detection and Suppression ($725,000).*** Smithsonian staff have developed a fire protection master plan for every major Smithsonian facility. Projects typically

include installation of detection systems such as smoke alarms, suppression systems such as sprinklers, and architectural modifications to create fire zones by installation of firewalls and doors.

- ***Access, Safety, and Security ($5,608,000).*** These projects provide better access to the Institution's facilities for persons with disabilities, improve environmental conditions in buildings, and correct facility conditions that threaten the security of the National Collections. Work includes:

  - projects such as asbestos abatement and correction of ventilation problems

  - modifications to ensure accessibility of public facilities, eliminating obstructions and overhead hazards, improving emergency warning systems, and providing seating space for wheelchair users and listening systems for the hearing impaired

  - projects to improve the security of the collections, staff and visitors, such as installing security surveillance systems, improving exterior lighting, and installing card access systems to limit and document entry to certain spaces

Infrastructure Repairs and Modifications. This category includes projects in the General Repair, Façade, Roof and Terrace Repair, Utility Systems Repair, and Repair and Restoration Planning, Design, and Inspection categories. This category also includes Alterations and Modifications (A&M) projects. The majority of the work in this category is accomplished by contract, with a small amount of work accomplished by existing employees or temporary staff when appropriate and cost-effective. The amounts indicated represent current planning estimates for each category.

- ***General Repair ($7,367,000).*** These projects include minor, unscheduled, but essential, repairs that the Institution cannot anticipate specifically. Estimates of requirements are usually based upon historical data on the volume of work needed each year.

- ***Facade, Roof, and Terrace Repair ($3,640,000).*** This work includes a variety of projects accomplished cyclically according to the life of the materials used. For example, most kinds of roofs need replacing nearly every 20 years, facade joints need recaulking and repainting about every ten years, and window frames and other exterior trim need repainting every five years. Smithsonian buildings require continuing facade work in order to restore and maintain intact the building envelopes.

- ***Utility Systems Repair ($6,380,000).*** These projects maintain, repair, and upgrade the HVAC systems, plumbing, electrical, and communications systems throughout the Institution's facilities. Ongoing renovations, repairs, and replacement of deteriorated equipment components are essential for ensuring reliable and energy-

efficient operation of utility systems. The long-term preservation of the National Collections depends upon stable temperature and humidity conditions.

- ***Repair and Restoration Planning, Design, and Inspection ($2,000,000).*** The Smithsonian uses funds to identify and analyze long-range repair and restoration needs and to design future-year projects in advance of funding requests. In addition to improving the accuracy of cost estimates, design of projects in advance of funding reduces escalation costs by enabling the staff to award construction contracts as soon as resources are appropriated. Needed repairs are also accomplished much sooner, thus preventing further deterioration and ensuring faster compliance with codes.

- ***Alterations and Modifications (A&M) ($2,000,000).*** The Institution must make changes, improvements or minor additions to existing space and plan for future requirements in order to maintain the vitality and operating effectiveness of its programmatic activities. Funding in A&M will allow staff to contract for space planning and feasibility studies to ensure the best programmatic use of space as needs change, for design and construction of specific building modifications and minor additions, and for equipping of changed space. Individual projects will cost no more than $1,000,000 and will have little or no impact on facility operating costs. As indicated, funding in FY 2001 at the freeze level will delay some of the changes and improvements needed to accommodate programmatic activities.

Repair, Restoration, and Alteration of Facilities
(Includes National Zoological Park)
FY 2000–FY 2005

(Dollars in millions)

CATEGORY TITLE	FY 2000 Request	FY 2001 Scenario 1	FUTURE REQUIREMENTS				
	Federal	Federal	FY 2002	FY 2003	FY 2004	FY 2005	Outyear Costs
Major Capital Renewal							
National Museum of Natural History	10.3	10.7	6.6	8.5	8.8	13.8	
Patent Office Building	8.0	7.0	17.0	18.0	10.0		
Arts and Industries Building	4.5	2.0	9.6	11.0	7.5	16.7	
Smithsonian Castle	.5	0.0	0.0	2.0	2.0	0.0	
National Air and Space Museum	0.0	0.0	0.0	0.0	0.5	0.0	
Renwick Gallery	0.0	0.0	0.3	0.0	0.0	0.0	
National Zoological Park	0.9	4.6	4.2	2.8	2.9	3.0	
SUBTOTAL	24.2	24.3	37.7	42.3	31.7	33.5	ONGOING
Code Compliance and Security							
Fire Detection and Suppression	0.8	0.7	0.7	1.2	1.0	2.2	
Access, Safety and Security	4.0	5.6	4.8	2.5	6.0	5.7	
SUBTOTAL	4.8	6.3	5.5	3.7	7.0	7.9	ONGOING
Infrastructure Repairs and Modifications							
General Repairs	6.8	7.4	8.7	6.8	8.9	7.7	
Façade, Roof and Terrace Repair	1.9	3.6	1.5	1.0	5.4	3.9	
Utility System Repair	5.2	6.4	4.6	4.2	5.0	5.0	
R&R Planning, Design and Inspection	2.0	2.0	2.0	2.0	2.0	2.0	
Alterations and Modifications	3.0	2.0	5.0	6.0	6.0	6.0	
SUBTOTAL	18.9	21.4	21.8	20.0	27.3	24.6	ONGOING
GRAND TOTAL	47.9	52.0	65.0	66.0	66.0	66.0	ONGOING

Construction ($6,500,000). Plans for facility development represent a major investment in the continuing vitality of all Smithsonian programs, whether they are for collections management, research, public exhibitions, or education, as well as its many support services. The Institution requests $6,500,000 in FY 2001 to carry out these plans. The estimate for the Construction account now includes the National Zoological Park's construction projects. Alteration and modification projects previously contained in the Construction account are now requested in the Repair, Restoration, and Alteration of Facilities account. The five-year construction program is summarized on the chart following this narrative. The construction program for FY 2001 includes

National Zoological Park Water Exhibit	$1,000,000
Smithsonian Astrophysical Observatory Hilo Base Building	4,500,000
Smithsonian Environmental Research Center Infrastructure	1,000,000
TOTAL	**$6,500,000**

- ***National Zoological Park Water Exhibit ($1,000,000).*** Water is the cradle of life and a crucial resource for life's maintenance. This exhibit explores the wonder of water in its many forms, how it shapes life on earth and sculpts the earth, the adaptations needed to live in water, water quality issues, and how we use water. In addition to renovating a previously closed area, this exhibit brings to life the world of water while introducing visitors to a theme which will be integrated throughout the Zoo in the coming years.

  Renovation of the 3-acre area to create the new exhibit is expected to cost $3,900,000. A total of $2,400,000 was appropriated between FY 1993 and FY 1995, and the National Zoological Park expects to raise $500,000 for this exhibit. Planning and conceptual design is complete and the Institution plans to begin site work in FY 2000. This work will include the restoration of the pond area, construction of a valley trail, preparations of the wetland area, and preparations for plantings. The Institution requests $1,000,000 in FY 2001 to complete the funding required for construction of the exhibit. The Water Exhibit will open to the public in late FY 2001.

- ***Smithsonian Astrophysical Observatory Hilo Base Building ($4,500,000).*** The SAO's Submillimeter Array (SMA) is a major initiative by the Smithsonian to place an array of telescopes on Mauna Kea in Hawaii. The SMA will consist of eight antennas whose signals are combined to produce very finely detailed images. It will be operated at submillimeter wavelengths, just a bit longer than infrared. This submillimeter radiation from the universe is accessible only from extremely dry sites of which Mauna Kea is a premier example. The resolution of the array will be 50 times finer than that achieved by telescopes currently making observations at these wavelengths. Because of its pioneering character, the array is expected to produce fundamentally new insights into many processes involved in the formation and evolution of stars, planets and galaxies. For example, the SMA is uniquely suited to

probe deeply into molecular clouds—the birthplace of stars—and examine the formation process of stars in unprecedented detail.

The project, begun in 1990, is very far advanced. Essentially all of the equipment has been designed and prototyped at SAO's facilities in Massachusetts. Since January 1999, the project has been in the process of relocation to Hawaii. As of July 1999 the first antenna of the array was operational on the summit of Mauna Kea. A team is present in Hawaii to carry out the installation process. Staff in Hawaii now totals 12, and will increase to about 35 during the critical checkout period of the entire array during 2000–2003. The operation of the instrument will be complex and will require the support of many scientists, engineers and technicians on a daily basis. The techniques required to successfully merge the eight antennas into a single astronomical instrument are at the cutting edge of technology and require intense human resources of the highest caliber. After assembly of the array, it will be maintained and operated by a permanent staff of about 25 living on the island of Hawaii.

Currently, base operations consist of 3,600 square feet of rented space at sea level in Hilo. For specific requirements involving vacuum technology and cryogens, SAO borrows space, which will have to be relinquished by FY 2001 from the National Astronomy Observatory of Japan. Because of the difficulty of working at 14,000 feet—for both mental and physical activities—it is essential to have a base facility near sea level. All other observatories on Mauna Kea—the California Institute of Technology Submillimeter Observatory (CSO), the International Gemini Telescope, the Joint Astronomy Centre (for two telescopes, the United Kingdom Infrared Telescope, and the International James Clerk Maxwell Telescope), the National Astronomy Observatory of Japan, and the University of Hawaii Institute for Astronomy—have such facilities.

SAO had originally planned to lease space to meet the base facility requirements in a building to be developed by the General Services Administration (GSA) in Science Park of the University of Hawaii at Hilo. The GSA project was canceled, however, and SAO has had to consider other alternatives. Continuing to share space with another organization is no longer an option. The base facilities of the other observatories are already overcrowded. While one of these organizations has provided space temporarily, it is already pressuring SAO to move out in order to make room for its own staff. In addition, the equipment set-up required to operate and monitor these optical observatories differs substantially from what SAO needs for submillimeter observations, and commercial space is both expensive and poorly suited to support high tech laboratories. The only viable option is construction of an SAO facility. It is crucial to the success of the project that the construction of a base facility begin as soon as possible.

Repairs, operations, development, and much of the scientific data analysis will be done from the sea level base facility with only a small crew traveling to the instrument on any given day. A recent re-evaluation of space concluded that

additional square footage is required for staff and laboratory operations. This consequently increased the square footage and cost estimate for construction over previous estimates. Although a partnership with the Academia Sinica's Institute of Astronomy and Astrophysics (ASIAA) will provide the funding for the design of the facility in FY 2000, the Federal portion of funding for construction will remain at $4,500,000.

The Institution requests $4,500,000 in FY 2001 to construct and equip this base facility at Hilo. The facility will include about 16,000 square feet of electronics laboratories, offices, and support space. The building will be constructed in Science Park, near the base operations facilities of other telescopes on the Mauna Kea summit. This location provides excellent access to the summit roads, to the communications hub, and to a larger scientific community with which to exchange ideas. The Smithsonian expects to have extremely important cooperative observing programs with two other telescopes with base facilities at the site, and this arrangement will help attract qualified personnel to what would otherwise be a remote and isolated work site.

- ***Smithsonian Environmental Research Center Infrastructure ($1,000,000).*** The Smithsonian Environmental Research Center (SERC) is the Institution's major center for ecological research and environmental education. SERC conducts long-term interdisciplinary studies on aquatic, terrestrial and atmospheric systems. One major research program at SERC quantifies the effects of atmospheric deposition and land use on ground water, streams, and estuaries. Another major program addresses the complexities of landscapes and the biological consequences of natural and human disturbances. Yet another focuses on the control and integration of population, communities, and ecosystems at the estuarine boundary between the land and the sea. SERC is a major resource of knowledge and expertise to many constituencies, including schools, governments, research institutions, and the general public.

  Research and public programs at SERC are providing to scientists and legislators the information needed to make decisions on the profound environmental issues of the day. Federal appropriations and grants, as well as other public and private sources, support this research. Efficient facility infrastructure is required to support the research program and to serve as an example of environmental stewardship to corporate, private and governmental entities.

  SERC's infrastructure includes roads, bridges, parking areas, sidewalks, piers, heating and cooling systems, water supply and treatment systems, sewage handling and treatment systems, storm water management, electric power, communications networks, fire protection and security systems. Over the past 20 years, the infrastructure at SERC has not kept pace with program growth, and systems are operating beyond their intended capacities. The key component of the infrastructure improvement project is consolidation of heating and cooling systems into a central utility plant, which will replace aging and inadequate systems now in individual

buildings with an energy efficient system that will service existing core facilities and provide some capacity for future expansion on the site. Other critically needed improvements include increasing water and electrical service capacity, storm water management, and modifications to the public access road. For FY 2001, the Institution requests funds to design and begin construction of the necessary infrastructure improvements, which are an approved part of SERC's Master Plan. Additional funds will be requested to complete the project in future fiscal years.

Long Range Construction Program
(Includes National Zoological Park)
FY 2000–FY 2005

(Dollars in millions)

ESTIMATED COSTS		PRIOR FUNDING	OUTSIDE FUNDING	FY 2000 REQUEST	FY 2001 SCENARIO 1	FUTURE EQUIREMENTS				
		Federal	Non-Fed	Federal	Federal	FY 2002	FY 2003	FY 2004	FY 2005	Outyear Costs
Smithsonian Astrophysical Observatory Hilo Base Building										
Plan/Design:	0.5		0.5		0.0					
Construction:	4.3				4.3					
Equipment:	0.2				0.2					
	5.0		0.5		4.5					
Smithsonian Environmental Research Center Infrastructure										
Plan/Design:	1.0				1.0					
Construction:	3.8					3.8				
Equipment:	0.0									
	4.8				1.0	3.8				
National Zoological Park Water Exhibit										
Plan/Design:	1.1	1.1								
Construction:	2.8	1.3	0.5		1.0					
Equipment:	0.0									
	3.9	2.4	0.5		1.0					
Smithsonian Astrophysical Observatory Veritas										
Plan/Design:	1.0					1.0				
Construction:	3.5						3.5			
Equipment:	0.0									
	4.5					1.0	3.5			
Smithsonian Tropical Research Institute Gamboa Complex										
Plan/Design:	0.0									
Construction:	2.5						2.5			
Equipment:	0.0									
	2.5						2.5			
TOTALS										
Plan/Design:		1.1	0.5		1.0	1.0				
Construction:		1.3	0.5		5.3	3.8	6.0			
Equipment:					0.2					
TOTAL		2.4	1.0		6.5	4.8	6.0			

Scenario 2
Two-Percent Reduction Below Freeze Level

To achieve a two-percent reduction as required under Scenario 2, the Smithsonian would reduce the funding level for salaries and expenses by an additional $7,448,000 below the freeze level in Scenario 1. In addition, funding for repair, restoration and alteration projects would be reduced by $1,000,000, and funding for construction would be reduced by $500,000, as shown in the table below.

	FY 2001 Freeze Level	FY 2001 2% Reduction	Change
Salaries & Expenses	$388,901,000	$381,453,000	-$7,448,000
Repair, Restoration, and Alteration	52,000,000	51,000,000	-1,000,000
Construction	6,500,000	6,000,000	-500,000
Total	$447,401,000	$438,453,000	-$8,948,000

To achieve the reduction of $8,948,000, the Institution would make the following reductions, listed in order from the easiest to achieve to the most difficult:

Salaries and Expenses at FY 2001 freeze level	$388,901,000
1. Reduce SI supplies and equipment by 7%	-2,000,000
2. Furlough most employees for an additional 1-2 days	-1,500,000
3. Reduce outreach/public programs/education by 9%, to include RIFs	-3,948,000
Total S&E, Scenario 2	*$381,453,000*
Construction at FY 2001 freeze level	$6,500,000
4. Delay SERC central utility facility	-500,000
Total Construction, Scenario 2	*$6,000,000*
Repair, Restoration, and Alteration of Facilities at FY 2001 freeze level	$52,000,000
5. Reduce RR&A by $1,000,000	-1,000,000
Total RR&A, Scenario 2	*$51,000,000*
Total FY 2001 Request at 2% below freeze level	**$438,453,000**

Scenario 2. Two-Percent Reduction Below Freeze Level (continued)

Projected Effect of Two-percent Reduction on FY 2001 Performance Goals

At this funding level, in order to fund the minimum required level of mandatory increases as discussed under Scenario 1, the Smithsonian would have to incorporate the reduction of $3,582,000 for staff furlough discussed under that scenario. Further reductions of $8,948,000 would then be applied to achieve the two-percent reduction below the freeze level.

An additional furlough of most Smithsonian staff (except for the minimal level of facilities and security staff) for 1-2 days, in addition to the 3-4 day furlough required at the freeze level, would increase the expected impact across the Institution. Museums would be closed for these additional days, additional public programs would have to be cancelled, and research and curatorial activities would be further delayed, with varying impacts. While research activities would be affected to some extent, particularly limiting the ability to conduct field work, collections management activities—already at a minimal level—would be protected to the extent possible to ensure adequate stewardship of the collections. The 7% reduction in supplies and equipment would affect every aspect of the Institution, from shortages of office supplies required for normal day-to-day functions of the Institution, to reduction in paper supplies affecting printing of informational and educational materials, to the inability to replace or repair malfunctioning or nonfunctioning office equipment in a timely manner.

In addition to these impacts, which would be felt across the Institution, the major effects of the two-percent reduction below the freeze level would be to performance goals II.1, *Provide new and updated exhibits that serve a wider audience,* and III.3. *Maintain, preserve, and upgrade the quality, condition, and security of facilities.*

II.1. Provide new and updated exhibits that serve a wider audience. This performance goal supports the Smithsonian's strategic goal to diffuse knowledge, which is also half of its mission. A nine-percent reduction in outreach, public programs, and education would significantly reduce the number of persons benefiting from these programs and exhibitions in the short run, and RIFs would impose more long-term constraints in this area. Among the possible effects would be the inability to upgrade material on the Smithsonian's website, reduction in traveling exhibitions, and fewer workshops for museum professionals and researchers. In addition, it is anticipated that publications, lectures, and other programs associated with exhibitions would be scaled back or eliminated in many museums. The reduction in these public and outreach programs would severely affect the Smithsonian's ability to achieve its strategic goal of diffusing knowledge through the myriad of educational programs developed for the public, teachers and students, and museum professionals, increased offerings on the Smithsonian website, and the wide variety of other programs and outreach activities that would be affected by this reduction.

III.3. Maintain, preserve, and upgrade the quality, condition, and security of facilities.

Funding at this level in the Repair, Restoration, and Alteration account would mean that essential renewal work would continue to be deferred in several Smithsonian buildings in the most serious condition. In addition, needed modifications and improvements required to maintain the vitality and operating effectiveness of Smithsonian programmatic activities would continue to be delayed. In Scenario 1, deferral of $10,000,000 in renewal work at the Patent Office Building in FY 2001 will extend the construction period an additional year. The building will therefore remain closed to the public longer, the building will continue to deteriorate, and project costs will increase by several million dollars due to escalation and additional collateral

damage to the building. Further, renovation of the Arts and Industries and Smithsonian Castle buildings will also each be delayed by a year in the future, escalating those costs and allowing further deterioration to occur in those buildings as well.

An additional reduction of $1,000,000 in funding for Alterations and Modifications will further delay changes and improvements to existing space that are needed to accommodate current and planned programmatic activities. The Institution has a growing backlog of requirements since new funding for these kinds of changes has not been available since FY 1997. These include improving collection storage space at the Hirshhorn Museum and in several Smithsonian Institution Library locations; preparing for exhibit hall reinstallation in the National Museum of American History, the National Museum of Natural History, and the National Zoological Park; and providing or modifying research space at Smithsonian research centers outside of the Washington DC area. Further delay contributes to continued operating inefficiencies and hampers efforts to achieve the Institution's goals in these areas.

The $500,000 reduction in funding in the Construction account for infrastructure improvements required at the Smithsonian Environmental Research Center will delay the start of construction of the central utility plant and modifications to electrical and water service capacity, storm water management, and the public access road. A key component of the project is consolidation of aging and inadequate utility systems now in individual buildings into a central utility plant with a single, energy-efficient system servicing all core buildings. These systems are already operating beyond their intended capacities. Further delay will hamper a number of research programs at SERC which contribute vital information to decision making on environmental issues.

Repair, Restoration, and Alteration of Facilities
(Includes National Zoological Park)
FY 2000–FY 2005

(Dollars in millions)

CATEGORY TITLE	FY 2000 Request	FY 2001 Scenario 2	FUTURE REQUIREMENTS				
	Federal	Federal	FY 2002	FY 2003	FY 2004	FY 2005	Outyear Costs
Major Capital Renewal							
National Museum of Natural History	10.3	10.7	6.6	8.5	8.8	13.8	
Patent Office Building	8.0	7.0	17.0	18.0	10.0		
Arts and Industries Building	4.5	2.0	9.6	11.0	7.5	16.7	
Smithsonian Castle	.5	0.0	0.0	2.0	2.0	0.0	
National Air and Space Museum	0.0	0.0	0.0	0.0	0.5	0.0	
Renwick Gallery	0.0	0.0	0.3	0.0	0.0	0.0	
National Zoological Park	0.9	4.6	4.2	2.8	2.9	3.0	
SUBTOTAL	24.2	24.3	37.7	42.3	31.7	33.5	ONGOING
Code Compliance and Security							
Fire Detection and Suppression	0.8	0.7	0.7	1.2	1.0	2.2	
Access, Safety and Security	4.0	5.6	4.8	2.5	6.0	5.7	
SUBTOTAL	4.8	6.3	5.5	3.7	7.0	7.9	ONGOING
Infrastructure Repairs and Modifications							
General Repairs	6.8	7.4	8.7	6.8	8.9	7.7	
Façade, Roof and Terrace Repair	1.9	3.6	1.5	1.0	5.4	3.9	
Utility System Repair	5.2	6.4	4.6	4.2	5.0	5.0	
R&R Planning, Design and Inspection	2.0	2.0	2.0	2.0	2.0	2.0	
Alterations and Modifications	3.0	1.0	5.0	6.0	6.0	6.0	
SUBTOTAL	18.9	20.4	21.8	20.0	27.3	24.6	ONGOING
GRAND TOTAL	47.9	51.0	65.0	66.0	66.0	66.0	ONGOING

Long Range Construction Program
(Includes National Zoological Park)
FY 2000–FY 2005

(Dollars in millions)

ESTIMATED COSTS		PRIOR FUNDING	OUTSIDE FUNDING	FY 2000 REQUEST	FY 2001 SCENARIO 2	FUTURE EQUIREMENTS				
		Federal	Non-Fed	Federal	Federal	FY 2002	FY 2003	FY 2004	FY 2005	Outyear Costs
Smithsonian Astrophysical Observatory Hilo Base Building										
Plan/Design:	0.5		0.5		0.0					
Construction:	4.3				4.3					
Equipment:	0.2				0.2					
	5.0		0.5		4.5					
Smithsonian Environmental Research Center Infrastructure										
Plan/Design:	1.0				0.5	0.5				
Construction:	3.8					3.8				
Equipment:	0.0									
	4.8				0.5	4.3				
National Zoological Park Water Exhibit										
Plan/Design:	1.1	1.1								
Construction:	2.8	1.3	0.5		1.0					
Equipment:	0.0									
	3.9	2.4	0.5		1.0					
Smithsonian Astrophysical Observatory Veritas										
Plan/Design:	1.0					1.0				
Construction:	3.5						3.5			
Equipment:	0.0									
	4.5					1.0	3.5			
Smithsonian Tropical Research Institute Gamboa Complex										
Plan/Design:	0.0									
Construction:	2.5						2.5			
Equipment:	0.0									
	2.5						2.5			
TOTALS										
Plan/Design:		1.1	0.5		0.5	1.5				
Construction:		1.3	0.5		5.3	3.8	6.0			
Equipment:					0.2					
TOTAL		2.4	1.0		6.0	5.3	6.0			

Scenario 3
Expansion Above Freeze Level

In order to proceed with initiatives already partially funded, to compensate for inflation, to provide for the safety and security of staff and visitors, to support increased workload, to meet required repair, restoration, and alteration of facilities needs, and to address performance goals as described in the justifications that follow, an additional $47,336,000 above the freeze level is requested as shown below.

	FY 2001 Freeze Level	FY 2001 Expansion Above Freeze Level	Change
Salaries & Expenses	$388,901,000	$424,237,000	$35,336,000
Repair, Restoration, and Alteration	52,000,000	64,000,000	12,000,000
Construction	6,500,000	6,500,000	0
Total	$447,401,000	$494,737,000	$47,336,000

S&E base at FY 2001 freeze level *$388,901,000*

(The proposed distribution of additional funding is shown below in priority order from most significant to least significant.)

1. Restore reduction proposed at freeze level: Furlough employees for 3-4 days	3,582,000
2. A. Balance of mandatory increases	
• General inflation	1,533,000
• Smithsonian Institution Libraries inflation	370,000
• Safety and security	157,000
B. Workload increases	1,631,000
3. National Museum of the American Indian (including Mall, CRC and support)	6,916,000
4. IRM Pool: Administrative Applications	3,000,000
5. IRM Pool: Institution-wide Requirements	2,400,000
6. National Air and Space Museum Dulles Center	580,000
7. Integrated Science for Ecological Challenges	2,499,000
8. IRM Pool: Administrative Applications	2,000,000
9. IRM Pool: Institution-wide Requirements	2,400,000
10. NMNH Field Emission Transmission Electron Microscope	1,768,000
11. Smithsonian Tropical Research Institute Transportation: Jacana Boat	1,700,000
12. NMNH Infrastructure	800,000
13 Public Education & Exhibition Reinstallation Pool	3,000,000
14. Collections Storage Equipment Pool	1,000,000
Total FY 2001 expanded S&E	*$424,237,000*
RR&A Base at FY 2001 Freeze Level	*52,000,000*
1. Increase RR&A funding to required annual level	12,000,000
Total FY 2001 RR&A	*64,000,000*
Total FY 2001 Construction	*6,500,000*
Total FY 2001 Request expanded above freeze level to include Program Initiatives	**$494,737,000**

Scenario 3. Expansion Above Freeze Level (continued)

a. Justification of Mandatory Increases for Sustaining Base Operations

Inflation. $1,903,000 is requested for inflationary cost increases, as described below.

General Inflation. $1,533,000 is requested to help offset the cumulative costs to the Smithsonian as a result of estimated inflation, which represents significant costs to the Institution. Inflation has the effect of seriously eroding research, exhibitions, collections management, education and public orientation programs, as well as facilities management and administrative services. The Institution has not received any across-the-board inflationary increases for supplies, equipment, and maintenance services since FY 1987. The amount requested represents an inflation factor of 1.021 applied to total nonsalary expenses for FY 1998.

Inflation for Library Materials. $370,000 is requested to counter the effects of continuing inflationary increases in book and journal prices. The ability of the Smithsonian Institution Libraries (SIL) to meet its mission-critical demand for core scientific journals has been jeopardized by ten years of an inflation rate greater than the rate of the Consumer Price Index. The prices of serials are inflating at a rate of 8% to 10%, while book prices inflate at over 4%. Since no additional funding was appropriated in FY 1999, SIL was forced to keep its materials budget flat at the FY 1998 level. The same will be true for FY 2000. SIL has continued to cull the journal list and eliminate book purchases to obtain a minimum critical subscription list. At the current rate of inflation, within five years SIL will be forced to spend its entire materials budget on serials alone, with no funds available for books or electronic resources.

Safety and Security. $157,000 is requested to address base deficiencies associated with safety and security requirements across the Institution. These represent new and increased requirements that are permanent additions to the base for which funds are not available. The funds will be used to perform drug testing and medical standards testing for security employees, provide for anti-terrorism measures, implement a chemical hood certification program, provide accessibility support, and implement an improved pest control program.

Drug use by employees who carry or have access to weapons in the workplace presents a serious concern for the safety of staff members, the visiting public, and Smithsonian property. The drug testing program, to be administered by the Office of Protection Services (OPS), will subject applicants and incumbent security officers to random, reasonable suspicion, post-incident, return-to-duty, and follow-up testing. Implementation of a medical standards program, also administered by OPS, will ensure that all security officers meet certain basic medical standards for physically performing their duties, especially for responding to emergency situations that may affect the safety and security of staff members and the visiting public.

With the bombing of the Alfred P. Murrah Building in Oklahoma City and other incidents, additional anti-terrorism steps are needed to protect Smithsonian staff and collections. Funding will be used for such purposes as providing mail-screening equipment at the Cooper-Hewitt, National Design Museum, and portable magnetometers at the Cooper-Hewitt as well as the George Gustav Heye Center of the National Museum of the American Indian.

The current American National Standards Institute tracer gas standard is nationally recognized as the most accurate method for assessing the ability of a laboratory hood to control the release of highly toxic chemical vapors. The test identifies chemical hoods that are unable to provide adequate protection to users due to application, design, age, or disrepair. Performing this test requires highly technical equipment and supplies currently not available at the Institution. Implementation of a hood tracer gas testing program, administered by the Office of Environmental Management and Safety, would provide state-of-the-art technical performance assessment of chemical hoods.

The Institution must continually address building management requirements related to safety and accessibility. In particular, deficiencies related to outdated or nonexistent signage compromise Institutional safety. The Quadrangle Building houses six Smithsonian units, as well as the International Gallery, which presents numerous exhibitions throughout the year. In addition, the Education Center contains a lecture hall and a variety of classrooms and conference rooms that are used heavily by other Smithsonian organizations and the Smithsonian Associates, which conducts day and evening courses there. The Concourse, adjacent to the Education Center on the third floor, continues to be the site of a large number of special events. Given the popularity of the facilities and the high volume of users, it is essential that public areas be properly identified and that directional signage is adequate in case of emergency evacuations. This is particularly true in the Quadrangle Building, where its location below ground level tends to disorient visitors and create confusion as to escape routes. Even in non-emergency situations, both placement and readability of signage (including the use of Braille) affect the usability of the facility by and personal safety of people with physical disabilities, particularly those with mobility impairments and those whose sight is impaired. Updated and improved signage will lower the level of risk and increase the safety to all visitors of the Quadrangle Building.

The Institution has experienced a significant increase in bee stings of visitors and staff due to ineffective pest control methods, particularly at the National Zoological Park. This situation raises safety considerations, especially the risk of serious allergic reactions. A more effective pest control contract must be implemented to reduce the number and frequency of stings. Funding for this effort would allow for more aggressive action such as the regular baiting and trapping of bees at trash receptacles.

Scenario 3. Expansion Above Freeze Level (continued)

b. Justification of Workload Increases

The Institution requests 15 FTEs and $1,631,000 to accommodate the much expanded workload requirements in recent years associated with the repair, restoration, and alteration of facilities, addressing of safety concerns, preservation of historical records, consideration of legal issues, and response to public inquiries. This request allows for a portion of the full requirement needed to meet this workload. Detailed explanations follow:

Administration of Repair, Restoration, and Alteration of Facilities Program (10 FTEs and $1,068,000). Repair, restoration and alteration of facilities (RR&A) provide for the systematic renewal of the Institution's facilities, including the cost of repairs, corrective measures to meet a variety of regulations, and replacement or renovation of major building components or equipment. For 2001, the Institution is requesting $64,000,000 for RR&A projects, which is a substantial increase over the FY 1995 funding level of $23,954,000. Excluding alteration and modification projects and Zoo projects from the FY 2001 request (because they were not included in the FY 1995 RR&A appropriation), the FY 2001 request is approximately $50,000,000 or 108% greater than the FY 1995 appropriation. Increases in funding have supported many more projects without any corresponding increase in administrative support. The Institution requires increased funding in the following administrative offices to support RR&A projects:

Office of Contracting (4 FTEs and $504,000). This office provides extensive contracting support for the RR&A program. The unit handled 124 RR&A projects with a dollar value of $37,013,000 in FY 1995. By FY 1998, the workload volume had increased to 336 projects with a dollar value of $58,294,000. This represents a 170% increase in the number of projects, with a 57% increase in dollar value. This request is for resources to hire contract specialists to support this increased workload.

Office of the Comptroller (2 FTEs and $143,000). This office has been significantly affected by the increased volume, dollar size, and funding complexity of RR&A projects. As a result, additional resources are needed to ensure that necessary funds controls are in place, project costs are properly allocated, financial management reports are prepared on a regular basis, and project accounts are adequately monitored and reconciled on a timely basis. This request is for support to hire accountants for additional work required for increased RR&A activities.

Office of Physical Plant (4 FTEs and $421,000). This office provides architectural and engineering services for RR&A projects. The sheer volume and complexity of these projects has placed considerable demand on the current staff and makes it increasingly difficult to provide adequate support. In FY 1995, the unit handled 126 RR&A projects averaging $122,000 in costs. By FY 1998, 134 RR&A projects

averaged $462,000, representing a 270% increase in costs. This request is for support to supplement the current staff of project managers and design managers.

Safety Concerns

Office of Environmental Management and Safety (1 FTE and $75,000). In addition to the surge in RR&A projects, the rapid growth in the expansion of Smithsonian facilities has created a significant increase in workload related to safety issues. New facilities include the Cultural Resources Center in Suitland, East Court of the National Museum of Natural History, George Gustav Heye Center in New York, and expansions at the Cooper-Hewitt, National Design Museum and the Smithsonian Tropical Research Institute. While supporting the RR&A program, the fire protection engineers in the Office of Environmental Management and Safety must also inspect all Smithsonian facilities annually and provide fire safety training to staff. Existing resources are now inadequate to keep pace with the additional workload and required inspections may not be done in a timely manner. This request is to hire a fire protection specialist.

Historical Records

The Smithsonian Institution Archives ($100,000). This unit maintains and preserves the historical records of the Institution. As the programs of the Smithsonian have increased, so have the requests for archival support. Between FY 1990 and FY 1998, the volume of historical records processed increased by 44% and the number of reference requests accommodated increased by 142%. As a result of workload, the unit has been forced to reprogram its funds from other objects to salaries to meet customer demands. Consequently there is no base left to cover other objects. The Institution's request, which is 1% of the unit's allocation, is to allow the unit to cover essential expenses such as computers, training, and archival supplies.

Legal Issues

Office of General Counsel ($129,000). This office has experienced a dramatic increase in the number of cases handled by attorneys during the past four years. Significant increases have occurred in the areas of collections management, contracts, ethics, intellectual property rights, litigation and tort claims. For example, the total number of litigation cases handled by the attorneys increased from 23 cases in FY 1995 to 47 cases in FY 1998, or an increase of more than 100% in workload. In a similar vein, the number of non-litigation cases handled by the attorneys also increased by more than 100% between FY 1996 (660 cases) and FY 1998 (1,349 cases). While one vacant FTE currently exists, there is no funding for this position. The Institution requests $129,000 to hire an attorney-advisor.

Alternative Dispute Resolution (1 FTE and $132,000). The Smithsonian is employing alternative dispute resolution (ADR) practices to seek resolution of employee complaints at an early, informal stage. To the extent that complaints can be resolved

early, the Smithsonian saves dollars in cost avoidance. Since ADR practices were initiated in FY 1996, the number of formal complaints has decreased, although the workload has significantly increased in the informal stage. This request is for resources to accommodate this workload and further ADR practices.

Public Inquiries

The Visitor Information and Associates Reception Center (3 FTEs and $127,000). This office is responsible for responding to postal and electronic inquiries from the public through its Public Inquiry Mail Service. Inquiries received through the World Wide Web have escalated dramatically in recent years. In FY 1998, 8,656 electronic inquiries were received, which represents a 1900% increase over the 432 inquiries received in FY 1996. Through the first half of FY 1999, 7,646 inquiries were received, suggesting that FY 1999 will experience a significant increase over FY 1998. With such a tremendous increase in electronic inquiries that threatens to expand ever more rapidly, the Institution requests the resources to support this workload.

Scenario 3. Expansion Above Freeze Level (continued)

c. Projected Effect of Expansion on FY 2001 Performance Goals

The *Strategic Direction* table which follows gives an overview of the performance goals that would be affected by the proposed expansion of the FY 2001 Federal Budget request. Immediately following the overview are narrative justifications of the initiatives contained in the proposed expansion, also arranged within the performance goals they would support.

Strategic Direction for Scenario 3

Strategic Plan Goals	Performance Plan Goals and Associated Program Initiatives
I. Increase knowledge	***1. Maintain and enhance research.*** • Integrated Science for Ecological Challenges • NMNH Field emission transmission electron microscope • STRI Jacana Boat ***2. Provide improved access to collections, including expanded use of electronic technology.*** • IRM Pool (part) ***3. Provide effective collections care, including improved storage.*** • NMAI CRC S&E[1] • NASM Dulles Center[1] • NMNH Infrastructure • Collections storage equipment pool
II. Diffuse knowledge	***1.* Provide *new and updated exhibits that serve a wider audience.*** • NMAI Mall Museum S&E[2] • NMAI CRC S&E • NASM Dulles Center • Public education and exhibition reinstallation pool
III. Support increased knowledge and diffusion	***1. Improve* the *efficiency of Institution-wide administrative work processes.*** • IRM Pool (part) • Workload Increases ***3. Maintain, preserve, and upgrade the quality, condition, and security of facilities.*** • Security system maintenance and renewal[3] • RR&A[2] • Construction[3]

[1]Justification included under Performance Goal II.1, pages 60, 64
[2]Part of justification included in Scenario 1, pages 22, 23
[3]Justification included in Scenario 1, pages 22, 33

Scenario 3. Expansion Above Freeze Level (continued)

The justifications for requested increases above the freeze are included here in the order of the Smithsonian performance plan goals, not in priority order (which is indicated on page 45).

Strategic Goal I. Increase Knowledge

Performance Goal #1. Maintain and enhance research.

Integrated Science for Ecological Challenges (27 FTEs and $2,499,000). The Smithsonian plays a critical role in providing and linking information, supporting interagency projects and making scientific advancements which support the President's Integrated Science for Ecological Challenges (ISEC) initiative. Within every one of the initiative's topics and cross-cutting themes, Smithsonian scientists and professionals collaborate with persons working on other U.S. Government, academic, and private sector projects and initiatives. However, the Smithsonian needs additional resources to fund critical gaps in its capabilities. These gaps include inadequate staffing and infrastructure, the need for new research data in fields not already covered by ISEC partners, and information management. The additional resources requested will expand the computerization and integration of disparate data streams flowing from the Smithsonian long-term site data sets. This integration of information will make possible a deepened knowledge of the fundamental building blocks of environmental understanding—species and ecosystem processes and responses. This knowledge in turn is necessary for the ultimate goal of the ISEC program—the development of a predictive ecological science—and supports the recommendations of the National Science Board's Task Force on the Environment (July 1999 Interim Report).

The following Smithsonian units will participate in this initiative: The National Air and Space Museum (NASM), National Museum of Natural History (NMNH), Smithsonian Environmental Research Center (SERC), and Smithsonian Tropical Research Institute (STRI). The table below details the increased research staff and funds requested to support the ISEC:

Application of Operating Resources by Category

Category	NASM		NMNH		SERC		STRI		TOTAL	
	FTE	$000	FTE	$000	FTE	$000	FTE	$000	FTE	$000
Monitoring/Species Discovery			6	534			3	359	9	893
Invasive Species			2	179	5	390			7	569
Landscape/Seascape Change	2	227					4	411	6	638
Informatics					5	399			5	399
Total	2	227	8	713	10	789	7	770	27	2,499

Monitoring/Species Discovery (9 FTEs and $893,000). The Institution requests resources to provide base data and tools for predictive ecology and for stewardship and management of national and global ecosystems. The Smithsonian is unique in having some of the longest-running sequences of ecosystem monitoring and evaluation. Linked with its strength in species identification, discovery and systematics, the Smithsonian provides both necessary data and models for monitoring to the rest of the scientific and policy/management community. Relying as it does upon our strength in tropical forest monitoring, this initiative will complement existing programs and work done by the National Oceanographic and Atmospheric Administration (NOAA) to develop integration across time and space for coral reef and coastal monitoring. The marine work at STRI—added to the 25 years of research in Belize and the unique coastal marine station in Florida, both of which are coordinated by the NMNH—provides a base from which a Caribbean monitoring system can be built. This initiative will help fulfill the research needed for the President's Executive Order 13089 on Coral Reef Protection.

Long-term monitoring is vital to understanding the full range of ecological processes. Coupled with this site-specific intensive work is the need—agreed upon by all Federal management agencies and the private sector—to understand and catalog the breadth of life on earth. Knowing the pieces is necessary to understand the processes as outlined in the President's Committee of Advisors on Science and Technology (PCAST) report, *Teaming with Life: Investing in Science to Understand and Use America's Living Capital.* The specific role of the Smithsonian within the Federal research system is to collect, house, research, describe, understand, and make available knowledge of the world's ecosystems. This initiative will add to the Smithsonian's capacity to work with existing and new collections comprised by the national collections, which are used by all sectors of society.

Invasive Species (7 FTEs and $569,000). The Institution requests resources to support enhanced research on causes, pathways, patterns and effects of alien invasive species. Invasive species know no borders and are an increasingly serious threat to the economy, health and natural resources of the United States. The Smithsonian's research expertise in systematics, biogeography, and ecology provides crucial ability to identify invasive species and to determine both their actual and potential spread. This background is needed to assess the impacts of invasive species in terrestrial, freshwater, and marine ecosystems throughout the world. SERC and NMNH cooperate with management agencies and the Department of Defense to provide expertise on biological characteristics of invasive species. Congress has named SERC the national clearinghouse for all information relating to ballast-borne species invasions.

The requested resources will permit staff to develop a next-generation database on invasive species for selected U.S. coastal ecosystems, expand inventories and analysis of alien species (historical and current) in Hawaii, and develop methods to coordinate marine invasive species data with patterns of ballast water delivery and understand the critical pathways that invaders use. Work in this initiative will establish key long-term research sites for documentation of geographic and temporal change of biological invasions. This will facilitate the work of many Federal, state, local and international

agencies and private organizations and will aid in the implementation of the President's Executive Order 13112 on Invasive Species. The specific value of the Smithsonian's contribution is our demonstrated ability to deal with marine and coastal invasions while other Federal entities focus almost exclusively in the terrestrial realm. In addition, the historic collections of all taxa over 150 years and the international breadth of Smithsonian research enables us to see patterns on a longer-term perspective. The interagency working group on alien species has highlighted the type of taxonomic work done by the Smithsonian as necessary and vital to success of this implementation.

Landscape/Seascape Change (6 FTEs and $638,000). The Institution requests resources to focus research and outreach on the impact of the accelerated changes in land and natural resource use on ecosystem functioning and processes. The initiative will utilize new tools for remote sensing and new data from NASA to provide information for local field sites on broader geographical contexts, as well as allow researchers and managers to expand their views of processes that modify the land and sea frequently at great distances from the monitored site. This work will be particularly useful for developing an understanding of the impact of both human activities and natural processes and hazards such as hurricanes and volcanic activity.

The requested funds will allow the Institution to establish key research projects comparing the effects of El Niño and La Niña in the Caribbean and eastern Pacific regions and to develop conceptual models of observed ecological responses to these phenomena. Scientists will measure impacts of change on the growing problems of coral spawning and coral bleaching and use this base to develop comparative surveys in other parts of the world.

Informatics (5 FTEs and $399,000). The Institution requests resources for a new initiative in bioinformatics to develop the systems and tools necessary to integrate disparate data housed at the Smithsonian on biological and environmental issues. Advances in information technology are now making possible the ability to coordinate and mine data from multiple places and use it to visualize both processes and relationships. The Smithsonian is a repository of vast amounts of information, much of which still needs to be computerized, and all of which requires new-generation information technology approaches to fully exploit their value. Biological and environmental data are scattered around the country and the world. The Smithsonian will increase its role in the national and global bioinformatics programs to help bring these data together. This initiative will support the Smithsonian's participation in the Organization of Economic Cooperation and Development, Megascience Forum's Global Biodiversity Informatics Facility, the National Biological Informatics Infrastructure, and NAFTA's North American Biodiversity Information Network, among others. It will link scientists and data from the Smithsonian to other Federal agencies (particularly the U.S. Geological Service, U.S. Environmental Protection Agency, and NOAA), as well as museums and research sites internationally.

Major Scientific Instrumentation: Field Emission Transmission Electron Microscope Laboratory ($1,768,000). For FY 2001, the Institution requests an increase of $1,768,000 for construction of an integrated Field Emission Transmission Electron Microscope (FE-TEM) Laboratory at the National Museum of Natural History (NMNH). The primary purpose of the laboratory is to analyze, in partnership with the Carnegie Institution of Washington, tiny particles from within meteorites and other cosmic samples. The public perceives exploration of the solar system as one of the most exciting areas of science. In fact, one of the most popular displays in the Janet Annenberg Hooker Hall of Geology, Gems, and Minerals at NMNH is *Stardust*, tiny diamond crystals formed long before the solar system was born. A photograph accompanying the object shows carbon atoms in one of the crystals magnified an astonishing 15 million times through use of an instrument similar to that proposed here. Over the next ten years the analysis of meteorite and returned mission samples, such as will be done at this proposed laboratory, will reveal an extraordinary wealth of new information about our world and its neighbors. Beyond the intrinsic importance of the science, Smithsonian scientists will be in the best position to teach and exhibit new scientific concepts in the future if they themselves are involved in the research that uncovers those concepts.

The instrument will also be used for the study of microstructures in a wide range of natural and experimentally synthesized rocks, minerals, and industrial materials as part of joint research programs at NMNH and the Carnegie Institution. Unique to this facility will be custom instrumentation for sample preparation and handling, that will facilitate transfer of the samples between different instruments for sequential measurements without the usual difficulty of relocating the samples once they have been moved. No such laboratory dedicated largely to extraterrestrial samples exists anywhere in the U.S., despite the fact that returned samples from a comet—a first—will be brought back by a NASA mission that was launched in February 1999. Specific scientific goals include

- the search for and study of samples of the tiny interstellar dust grains from which the solid bodies in the solar system were first made. Some of this material exists presently in the form of meteorites, and work on the meteorite samples will begin immediately upon completion of the lab. Study of cosmic dust samples will necessarily commence after return of those samples to Earth from future space missions.
- studying at a microscale how rocks weather on the surfaces of other worlds such as Mars. The fine-grained weathering material potentially contains information about the long-term history of the Martian atmosphere and climate. This program will begin by looking at weathering products within existing meteorite samples, and will later look at material returned by space missions such as the proposed Martian sample return in 2006.
- studying the microstructures of natural and experimentally synthesized minerals. All mineral crystals grow at the atomic scale, and this new instrument will provide fundamental information about the details of that process regardless of whether the

crystals grew deep in the Earth or in the atmosphere of a distant star. Part of the goal is to develop new analytical techniques for these studies.

This request is for a two-year increase to the major scientific instrumentation base in the amount of $1,768,000 each year in no-year funds. The requested Smithsonian funding will support equipment development, equipment purchase, upgrading existing laboratory space, and other non-salary costs. NMNH staff scientists will apply their skills to analyzing extraterrestrial collections, many of which will come from NASA space missions. Any incremental operating costs will be supported through new and existing NASA research grants. The Carnegie Institution of Washington expects to participate in development aspects including, as needed, ancillary instrument development costs, funding an on-going post-doctoral fellowship to the laboratory, and research. An advisory team is in place for coordinating the development of the new instrumentation and for aiding in the search for staff. Actual design and development would begin in late 2000, simultaneously with preparation of laboratory space. Preliminary installation and testing of equipment is anticipated for early 2002, followed by continued development and refining of the instrumentation over the following two years.

Smithsonian Tropical Research Institute: Vessel ($1,700,000). For FY 2001, the Institution requests an increase of $1,700,000 to purchase a replacement vessel for the aging Jacana, a 65-passenger boat that transports staff and visitors from the town of Gamboa to Barro Colorado Island (BCI).

Purchased in 1987, the Jacana operates on a daily basis transporting passengers across the Canal. Research activity at BCI has grown in recent years and the number of passengers frequently surpasses the Jacana's maximum passenger capacity, restraining the number of people who can go to the island or requiring staff to arrange alternate means of transportation. Also, because the boat's large complicated engines are in constant use daily, and because of their age, they require a very high level of maintenance. Breakdowns are occurring more frequently and the boat is out of service on a regular basis. This has resulted in increased costs for repair and to procure alternate transportation.

The requested funds will resolve the problems of insufficient passenger capacity and unreliability of a deteriorating vessel while ensuring passenger safety. STRI is considering the option of purchasing a large catamaran, which can carry a large number of people and achieve high speeds with smaller engines. Because this will produce a smaller wake, STRI will be able to transport more people without violating wake limits set by the Canal Authority. The smaller engines would also require less maintenance.

Since BCI is critical to STRI's missions, adequate and safe transportation is essential. Further efforts to keep the Jacana operating will result in diminishing returns due to ever-increasing maintenance and repair costs, and increasing passenger exposure to risk.

Performance Goal #2. Provide improved access to collections, including expanded use of electronic technology.

Institution-Wide Program: Information Resources Management Pool ($4,800,000). For FY 2001, the Smithsonian Institution requests an increase of $4,800,000 to address information technology needs across the Institution. The Institution requests that the funding for this program remain available until expended.

The requested funds will support improvement of the Smithsonian's information infrastructure and systems, including enhancing public access to collections images and information and upgrading the Smithsonian's network infrastructure, servers and software.

The Smithsonian is greatly increasing its use of technology to support management of its resources and to share these resources with researchers, other museums, educators, parents, students and the public at large. In FY 1999, base funds of $2,810,000 supported an Institution-wide network, various automated resources management systems, collections information systems and digitization of objects and images to link to collection records, as well as software application development and upgrades. A portion of this program provides an infrastructure upon which the Institution's programming for the Web can be extended to all our various electronic visitors. Schools, libraries, and homes across the Nation now have the ability to make electronic visits to their national museums via the Smithsonian's popular websites. Programming for the Web is an important new responsibility of each museum, research institute and program office, and public expectations of website offerings increase daily.

Performance Goal #3. Provide effective collections care, including improved storage.

National Museum of Natural History Collections Infrastructure ($800,000). The increase requested for FY 2001 is to meet collections management infrastructure needs in the National Museum of Natural History (NMNH). The NMNH collection of nearly 140 million objects is by far the largest and most complex of any collection in the entire Smithsonian, ranging from dinosaurs to the Hope Diamond. In addition to representing more than 70% of the entire Institution's collections, the Museum's holdings constitute the largest assemblage of natural history objects/specimens and anthropological artifacts in the world. Such collections are not static and continue to grow in size and in value over the years. Keeping up with both the costs of conserving century old collections and properly maintaining new collections necessitates additional expenditures.

The Museum's holdings are frequently sought for study, education, and exhibition purposes throughout the United States and abroad, and in fact are the most frequently requested set of collections for loans to other institutions. It is an unparalleled collection that cannot be replicated, representing items that exemplify the documentary evidence of life on earth ranging across millions of years. These collections are stored in a variety of media, from dry to wet, and also in liquid nitrogen for tissue samples. In addition, the conservation of these collections (especially anthropological items but increasingly works on paper and biological specimens) require specialized supplies and tools to ensure adequate preservation for future generations.

The proposed funding will allow the Museum to buy basic supplies such as glassware to house specimens, preservation fluid, and needed supplies and equipment for the conservation and preservation of our priceless national collections. The proposed funding will allow the Museum to restore its collections management program—which has been eroded by years without inflationary increases—to a level comparable to other major national museums throughout the world.

Collections Storage Equipment Pool ($1,000,000). An increase is requested for FY 2001 to establish a no-year collections storage equipment pool to make more efficient use of existing space and improve the preservation of and access to the collections. The funding would be used to design, purchase, and install collections-related storage equipment—primarily compact shelving systems—throughout the Institution.

Adequate collections storage space is a critical problem for the Smithsonian's museums, archives, and libraries in terms of accessibility for researchers, conditions for the collections themselves, and room for growth. Many collections are stored in poor environmental conditions, which cause deterioration from temperature variation and pest infiltration. Objects are often over-crowded, which limits their availability to researchers.

Despite an aggressive effort to loan and deaccession collection items and a mandatory pre-accession approval process, the Smithsonian's collections will continue to grow as does the core of any active museum. At the close of 1998, museum collections comprised 141 million objects and specimens and 138 million archived documents, and the libraries of the Smithsonian held 1.4 million volumes. These figures represent a three-year increase of 2.3 million objects and specimens, 8.6 million documents, and 46,000 volumes. Except for the Museum Support Center (a majority of which supports the National Museum of Natural History) which will be filled in 2001, and the Cultural Resources Center of the National Museum of the American Indian, there has been no increase in space devoted to the growing collections needs across the Institution's art and history museums despite a master plan developed in the 1980s. More efficient cabinetry will substantially improve the current space constraints.

The entomology collections at NMNH provide a good example. These collections —30 million specimens— are the foundation for basic research on patterns of biological diversity, are used in exhibits, and are consulted daily by USDA scientists in support of U.S. agriculture and by U.S. Army scientists at the Walter Reed Army Medical Center in support of the battle against insect-borne diseases. Entomology collections have for over three decades deteriorated due to substandard storage containers that did not protect against pests. Crowding and resultant misfiling have made it difficult at best to organize the collections so that information could be extracted from them. A large part of these collections are now being moved to the new East Court building into compact storage equipment that almost doubles the capacity of conventional storage. As a consequence, staff will be able to make available critical information contained in the collections to user groups such as government and non-governmental agencies and scientists via the World Wide Web, and the collections will be better protected from pest invasion.

Another example is the Smithsonian Institution Libraries (SIL). In its last audit of SIL, the Smithsonian's Office of Inspector General cited the need to convert SIL's shelving to compact shelving systems to allow for decompression of the collections and improve the ability to accurately document the location of the collections.

All of the Smithsonian's collecting organizations will be eligible to receive funding from the pool, but special emphasis will be placed on those museums and offices with the most critical needs. Many of these needs can be met with one-time increments of funding, but many, including those of the Smithsonian Institution Libraries and the National Museum of Natural History, require significant, multi-year funding to adequately address their storage deficiencies.

Performance Goal #1. Provide new and updated exhibits that serve a wider audience.

National Museum of the American Indian (NMAI) (35 FTEs and $6,916,000). The increase requested for FY 2001, all of which is to remain available until expended, is for the Mall Museum opening and for improved public access to the collections at the Cultural Resources Center (CRC). Both efforts would broaden access to Native American artifacts and to information about the cultures that the collection represents. The museum-going public, Indian communities and individuals throughout North and South America, as well as native and non-native scholars, would benefit from this increased access to the Museum's treasures.

The amount requested here in Scenario 3 is to be added to the amount requested in Scenario 1 ($1,800,000) to reach the full amount required in FY 2001 to meet the Mall Museum opening schedule.

Mall Museum (14 FTEs and $4,429,000). The FY 2001 increase would move NMAI much closer to its goal of providing first-rate care and wide public access for the artifact, archive, and library collections entrusted to it by the legislation of 1989. By continuing to relocate the collection from New York and providing the needed program and support staff at the CRC, the long-term preservation of the collections would be assured. Applying current technology to recording collections data during this relocation would improve management of the collections, expand security and inventory efforts, and make broadly accessible both text and image information for multiple users in on-site and distant locations. Community services staff would help link the CRC's resources to specific users and encourage collaborative projects. Finally, the funds would help begin the crucial work of producing the inaugural exhibitions and related educational publications and materials that would make NMAI's collections directly accessible to millions of visitors to the new Mall Museum.

- **Mall Museum Opening ($3,205,000).**

  Exhibitions. $1,000,000 is requested to begin production and fabrication of exhibitions at the Mall Museum as required to meet the Mall Museum opening schedule. Non-appropriated Trust funds are also being raised for exhibition costs.

  Cultural Resources. $481,000 is requested to complete the curatorial research and development of the Mall exhibitions, to support extensive coordination and liaison with 35 communities throughout the hemisphere, and to support the acquisition of contemporary objects and art for the Mall exhibitions. As NMAI's collection is largely historic in nature, acquisition ($150,000) of these contemporary items would significantly contribute to the exhibitions' recognition of the continuing vitality of Native cultures. Curatorial research with Native communities would involve

consultation with tribal members as well as with experts at museums throughout the United States, Canada and Central and South America.

Public Programs ($1,074,000).

Educational Film. $850,000 is requested for production of an educational film to be shown daily at the museum to inform the public about the diversity of the native cultures of the Americas, and to underscore the vitality of contemporary Native American culture. This key educational tool may be the only Museum experience available for many visitors if crowds exceed our space accommodations.

Potomac Center exhibit. $150,000 is requested to fund design and fabrication of reusable, portable exhibit modules ($60,000) for text panels, video programs, hands-on activities, and interactive computer programs to be used for exhibits and programs in the Potomac Center. This area is to be the main gathering place in the Museum, as well as the setting for events such as dances, performances, demonstrations, and storytelling. The materials used would match the Potomac Center architecture. The opening exhibit/program is about native boats and includes acquisition of such items as a northwest-coast canoe, a birch-bark canoe, and a Plains skin-covered boat ($90,000).

Commemorative books. $74,000 is requested to provide contract editorial and photographic services for two major books to commemorate the Museum's opening. The working titles of these books are *The Native Universe* and *The Soul of a New Museum.*

Furnishings, Equipment, Technology. $650,000 is requested for essential furnishings and technology needs as the building is being constructed and limited early occupancy is obtained. Funding will provide for design, prototyping and development of the communications and network control systems ($275,000). Remaining funds will support equipping of the exhibits workshop in the lower level of the building ($375,000). This workshop will include woodworking, welding, and painting equipment, a forklift and other lifts and carts and cabinets needed for the initial moving and installing of artifacts in the exhibits.

- **Mall Museum Operations (14 FTEs and $1,224,000).**

Two new administrative technicians and one facilities manager would prepare for the opening of the Museum and the increase in services required. It is essential to have a facilities manager on staff and available for constant consultation during the construction process of a new building particularly with regard to mechanical and other specialized systems. This position serves as the focal point to maintain and operate all environmental support systems for a building that meets the specialized needs of the artifacts on exhibit. This Museum will have several million visitors a year, provide office space for museum staff and volunteers, support a technology

system for exhibits, and provide interactive experiences for visitors as well as routine office needs.

Six public programs positions are requested to prepare for operating a fully staffed museum in 2002. An education manager is requested to plan and supervise the educational programs. An editor is requested to support the increased demands for editorial assistance throughout the Museum's projects and education endeavors. A Resource Center program manager is requested to plan and manage the Museum's public reference center. A media program manager is requested to plan and manage film programs and audiovisual services for the theater and other program spaces. Also requested are an administrative assistant to help the program managers and a visitor services manager to plan and manage ticketing and crowd control for galleries and all other public spaces.

Five positions are requested to develop and coordinate the design and production of the Mall Museum exhibitions. A media producer will work with the exhibition project teams and designers to ensure efficient and unified solutions to all exhibition media needs. This person will coordinate the work of the contract exhibition and media design and production firms. A writer/editor will provide editorial oversight to the exhibition authors so the written story is grammatically correct, clear, and coherent. A graphic designer will provide the design services for the Mall exhibits, visitor guidance aids, and special events and program graphic needs. A production supervisor will help solicit, select, and monitor the work of all exhibition production contracts. This person will manage the logistics and schedule of exhibition installation in the new Museum and coordinate and organize equipment procurement and installation for the exhibition labs. An administrative assistant will provide support for the management of the exhibit labs, staff, and procurement.

Cultural Resources Center (21 FTEs and $2,487,000). The FY 2001 increase will improve public access to the collections at the Cultural Resources Center and provide continued support for moving the collections from New York to the facility in Suitland, Maryland.

- **Move funding ($1,100,00).** Funding is requested to increase contract services to bring the planned relocation of the collection from the Bronx facility to a full operational level as originally budgeted for in the five-year move plan. This increase is critical to keeping on track with the move plan in addition to accommodating the Mall Museum planned opening in 2002.

- **Cultural Resources Center Operations (21 FTEs and $1,387,000).** The addition of four staff for curatorial operations at CRC is required to fulfill NMAI's plan for developing and sustaining exhibitions in New York, in DC, and throughout the "fourth museum." The program funding is requested to assist the staff in performing research on a virtually unknown and undocumented collection. Research results are expected to contribute significantly to the quality of future exhibitions and publications.

Five additional positions will augment the archive and photo service unit responsible for integration of the Huntington Library materials as well as cataloging, digitizing, and researching the collection. Acquiring film and video collections, documenting current events, and providing continuous access to the collection also support an increased staffing level. In addition to the library technician (for the Smithsonian Institution Libraries), two archivists and one photographer requested, a paper conservator position would be devoted to the crucial and immediate preservation requirements of photographic, paper-based, and fine arts objects.

A program specialist would plan and implement NMAI's community services and training and consultation programs with particular focus on radio programming. This would allow full implementation of a successful pilot program, which has already broadened the scope of community services and strengthened the relationship between NMAI and its constituents. This program is one of the most significant efforts on the part of NMAI to accomplish its mission to serve Native American constituents.

Two additional positions would develop and maintain the content, computer programs, and databases for interactive computers for the Mall Museum. This increase is key to utilization of technology to provide information and data to visitors to NMAI, whether in person or via technology.

The addition of two positions for the technology component at CRC would provide a programmer/analyst to develop data handling systems for curatorial information and a data technician to work with registration data management. Funds for systems software and contract services would develop and expand a customized museum information system.

Three facilities management staff on site would meet the day-to-day operational needs of CRC, which has a state-of-the art facility with a wide range of specialized environmental needs. With increased usage due to program activities and the move of the collection, facility upkeep requirements are expected to increase proportionately. Finally, four positions for the Institution's Office of Physical Plant would provide maintenance services for building systems and structures, grounds maintenance, and transportation services for CRC.

The following chart details NMAI's requirements by program for FY 2001 in total, combining the requests included in Scenarios 1 and 3.

NMAI FY 2001 REQUEST
Total of Scenarios 1 and 3

	FTEs	Dollars
MALL MUSEUM		
Mall Museum Opening		
• Exhibitions		2,300,000
• Cultural Resources		731,000
• Educational Film		850,000
• Potomac Center		150,000
• Commemorative Books		74,000
• Furnishings/Equipment/Technology		900,000
Subtotal, Mall Museum Opening		*5,005,000*
Mall Museum Operations		
• Education	1	92,000
• Exhibitions	5	539,000
• Publications	1	157,000
• Resource Center	1	65,000
• Performance/Media	2	109,000
• Visitor Services	1	65,000
• Administration/Facility Management	3	197,000
Subtotal, Mall Museum Operations	*14*	*1,224,000*
Total, MALL MUSEUM	**14**	**6,229,000**
CULTURAL RESOURCES CENTER		
Move Funding		1,100,000
Subtotal, CRC Move Funding		*1,100,000*
Cultural Resources Center Operations		
• Research & Curatorial	4	262,000
• Archives Unit	2	186,000
• Conservation	1	65,000
• Photo Services	1	65,000
• Community Services	1	94,000
• Resource Center	2	145,000
• Information Resource Mgt. and Technology	2	236,000
• Facility Management	7	290,000
• Library technician for the Huntington Collection (SIL)	1	44,000
Subtotal, CRC Operations	*21*	*1,387,000*
Total, CULTURAL RESOURCES CENTER	**21**	**2,487,000**
Total NMAI FY 2001 Request	**35**	**8,716,000**

National Air and Space Museum–Dulles Center (5 FTEs and $580,000). The Dulles Center is vitally needed to prevent further deterioration of one of the world's most valuable and irreplaceable collections of artifacts representing the history of aviation and spaceflight. Upon completion, the Dulles Center, which is being built with private funds, will safely house aircraft and spacecraft currently stored at the National Air and Space Museum's (NASM) Paul E. Garber Facility and at Dulles International Airport. The facility is to be located on an approximately 176.5-acre site on Dulles International Airport property near the intersection of Route 28 and Route 50 in northern Virginia. The Center would house and display approximately 80% of the Smithsonian Institution's collection of artifacts related to the history of aviation and spaceflight. The Smithsonian has already received $87,000,000 in pledges toward the construction. The Commonwealth of Virginia has agreed to provide $34,000,000 for infrastructure such as roads.

At Dulles, artifacts that have never been on display—including very large aircraft and the space shuttle *Enterprise*—would be accessible to the public for the first time in a functional hangar-like facility that would also ensure the collection's preservation. Through the Center, NASM would continue to lend artifacts to other museums and prepare artifacts for exhibition at the Air and Space Museum on the Mall. Included in the design is a restoration facility capable of preserving the largest artifacts in the collection while the public watches. A large-format theater, classrooms, archives center, observation tower, conservation lab, and study collections wing have also been designed. The new Dulles Center would provide museum-quality housing for the collection, as well as access to the artifacts for the public and researchers. The Center itself would serve as a unique educational resource for on-site visitors and for students of all ages who access the collection electronically. The links of this initiative to NASM's mission include preservation of historical artifacts as well as display of collections as part of the public education program.

The request for FY 2001 includes support for collections preparation, exhibit development, and related programs. In FY 2001 work continues on stabilizing the collection, preparing the archives for shipment, developing the educational program and exhibits, and building operations.

Of the 5 FTEs and $313,00 required to ready Dulles Center operations, one FTE will prepare the massive paper and microfiche archives for shipment from the Garber Facility for transfer. An additional position will work with national and regional school systems to develop aviation and space related programs. Current projections call for 700,000 students per year, 20 percent of the total visitors, to visit the Dulles Center. Two additional FTEs will continue with the preliminary design to support the exhibition program by developing prototype exhibits for the Dulles Center. Finally, one FTE will provide administrative support for building operations. In addition to this request, $267,000 will support the equipment, such as fork lifts and tool cribs, needed to transfer the collection to the Dulles Center as well as testing and developing related exhibition structures.

Public Education and Exhibition Reinstallation Pool ($3,000,000). The Institution requests $3,000,000, to remain available until expended, for a pool of funds to be used in support of improvements to exhibitions and to provide improved services and increased educational opportunities for visitors to Smithsonian exhibitions both on the Mall and throughout the United States. In FY 2001 it is anticipated that the funds requested will be used for the purposes described below.

Exhibition Renewal ($2,000,000). The Institution requests funds to establish an exhibition renewal program to plan major exhibitions as Smithsonian buildings are scheduled for renovation. The Institution has begun a successful, systematic plan to carry out a major capital renewal program to ensure that its building systems are modern and sufficient to continue to serve a growing public. At the same time, the capacity to educate the public, to convey the results of Smithsonian research, and to stimulate critical thinking about national issues is undercut by outdated and outmoded exhibitions in many buildings that are currently being renovated or that will be renovated beginning in the year 2000. Planned major re-installations require years of preparation to complete and millions of dollars beyond annual Federal allocations. The museums have achieved some success in raising funds for specific major exhibitions, such as the Janet Annenberg Hooker Hall of Geology, Gems, and Minerals, and the Star-Spangled Banner preservation project, but many exhibitions and all exhibition planning require base support.

In FY 2001, the Smithsonian anticipates using the requested funds to support the National Museum of Natural History's (NMNH) plan to create a central, awe-inspiring exhibition that integrates objects and knowledge from anthropology, geology, and biology as the centerpiece of a major museum-wide reinstallation project. The funds would also support the National Museum of American History's (NMAH) Blueprint plan. The Museum plans to heighten the visitor's experience through new, permanent and changing exhibitions, enhanced orientation and way-finding, and innovative learning opportunities taking advantage of new technologies. Both museums are attempting to replace and update permanent exhibitions developed 20-30 years ago.

In future years, other major projects will include the reinstallation of galleries in the Patent Office Building, which houses the National Museum of American Art and the National Portrait Gallery, after the Building's renovation is completed in FY 2003. The renovation will create much more space for public programming and amenities, as well as the opportunity to display and interpret more of the Smithsonian's collections that relate to our national identity as expressed in the arts.

Outreach in Rural America ($500,000). With additional funding, the Institution would be able to expand its exhibition outreach in small-town America, capitalizing on the immense popularity of the Smithsonian in rural communities. The Smithsonian Institution Traveling Exhibition Service, in a partnership with state humanities councils nationwide, has been taking Smithsonian exhibits into rural parts of the country since 1994. Installation, technical training and public program workshops accompany each exhibit. These are the tools that enable rural museums and community volunteers to

organize and host major cultural and educational events. To date, the program has reached 135 towns in over 22 states and has received requests from all 50 states. The goal is to reach more towns in every state, providing opportunities to invigorate not only the cultural vitality of rural America but also to enrich the cultural landscape of the nation as a whole.

Asian Pacific American Programming ($200,000). Funds requested in FY 2001 would establish a pool managed by the Provost and carefully allocated to support a variety of activities designed to strengthen existing research, collections, exhibitions, and programs that represent Asian Pacific American heritage throughout the Institution. Projects with the potential to attract matching and, ultimately, sustaining funds from non-Federal sources will be emphasized.

A number of Smithsonian exhibitions have been identified that require modification in order to present more effectively Asian Pacific American history and culture. Among the exhibits are the Oceana Hall in NMNH and the locomotive hall in NMAH. Also, these funds would support the design of a traveling exhibition developed with NMAH addressing the World War II experiences of Asian Pacific Americans. Finally, they would be used to create paid internship and fellowship opportunities for undergraduates, graduates and senior scholars and to produce professional development seminars in conjunction with the Smithsonian's Center for Museum Studies. The number of Asian Pacific Americans working in museums can be increased by encouraging the recruitment of young Asian Pacific American professionals into museum careers, introducing Asian Pacific American scholars to museum work, and making professional development opportunities available to current Asian Pacific American museum professionals.

Accommodations for Staff and Visitors ($300,000). The Smithsonian values its diverse public and workforce, made up of people with a broad range of abilities and ages. A striking percentage of these individuals belong to a large and growing population of graying America as well as individuals who have survived accidents and disease with residual temporary and permanent disabilities. When they come to the Smithsonian, these individuals expect accommodations that facilitate their full enjoyment of the Institution's many offerings. The number of people requesting accommodation increases annually. The cost of services to assist visitors and staff with disabilities is rising dramatically, and the Smithsonian's budget for accommodation cannot provide all that is needed. To enable each of the Institution's museums, institutes and offices, including the National Zoological Park, to provide such services efficiently and economically, the Institution would use this funding to support a centralized accommodation program that would be administered through the Office of the Provost. The program would contract for services such as sign language interpreters, purchase equipment such as assistive listening systems, provide alternative formats of print publications, and train Smithsonian staff in such topics as the use of various kinds of equipment and incorporating assistive technology and services into their workplace, exhibitions, and programs.

Strategic Goal III. Support the increase and diffusion of knowledge

Performance Goal #1. Improve the efficiency of Institution-wide administrative work processes.

Institution-Wide Program: Information Resources Management ($5,000,000). For FY 2001, the Smithsonian Institution requests an increase of $5,000,000 per year for four years to initiate a multi-year project totaling over $25,000,000. The Institution will also be applying Trust funds to the project in amounts proportionate to the amount of Trust activity supported by the system. This project will result in a fully automated integrated administrative information system that will support the mission of the Smithsonian, meet its legislative obligations, and support its revenue-generating goals. The Institution requests that funding remain available until expended.

The Smithsonian's current systems for finance, procurement, human resources, and facilities and property management depend upon multiple independent databases, and often produce redundant data. A technologically advanced administrative computing system would link these information sources and allow automation of many manual processes required today. It would also address the critical need to replace the Smithsonian Financial System (SFS) within the next two years due to lack of system support. The requested administrative system would address the four critical administrative objectives described below.

- ***Increase Efficiency.*** A single integrated system would eliminate redundancy of effort and data and reduce the opportunity for error. It would also reduce the substantial amount of time each month that is currently devoted to reconciling data between central and individual organization records. It would automate thousands of routine and repetitive transactions that are now performed manually and free staff for more challenging work. Finally, it would create critical linkages that would encourage better management of the Institution's human, financial, and physical resources.

- ***Manage growing workload.*** Although no significant increases in the number of the Institution's administrative staff are foreseen, workload continues to grow as the Institution pursues its expansion of research and public education programs and exhibitions. An integrated system would allow staff to meet new and escalating demands for information without additional human resources. Furthermore, using technology to perform routine work could allow the Institution to retrain its staff and upgrade skill levels to meet new program challenges.

- ***Improve decision support.*** A fully integrated and automated administrative system would give managers better tools to plan and manage their resources. It would reduce the time spent on routine transactions and reconciliations and increase the time and capacity available for analyzing, planning, and managing resources and results.

- ***Meet growing expectations for information.*** An administrative computing system would address the growing demands from both internal staff and external constituencies for timely information. It would provide a broad spectrum of information to a variety of clients. It would also help management and staff produce accurate and timely data in a variety of forms, allow flexible data manipulation and reporting, and meet the accountability needs of new programs.

  Accountability to all of our various constituencies is critical. They expect the Institution to be able to produce whatever information they need. It is becoming increasingly difficult to patch together information from disparate sources that track the inner life of the Institution in order to meet these growing expectations.

Performance Goal #3. Maintain, preserve, and upgrade the quality, condition, and security of facilities.

The requests for security system maintenance ($650,000) and construction ($6,500,000) are found under Scenario 1, as is part of the request for repair, restoration, and alteration of facilities.

Repair, Restoration, and Alteration of Facilities. $12,000,000 in additional funding above the FY 2001 freeze level is requested to allow the Institution to continue timely renewal of some of the most deteriorated buildings, and to make ongoing repairs on the required schedule to maintain current conditions in the newer buildings.

Major Capital Renewal.

- ***Patent Office Building ($10,000,000).*** The requested increase of $10,000,000 will provide the full request of $17,000,000 in FY 2001 needed to allow the Institution to complete work on this major project over three years, as originally planned and scheduled. Completing this major project on schedule will also mean the Arts and Industries and Smithsonian Castle building projects will not be delayed.

Infrastructure Repairs and Modifications ($2,000,000). The requested increase of $2,000,000 will provide a total of $4,000,000 for Alterations and Modifications (A&M). Funding of A&M projects at this level will allow the needed changes, improvements, or minor additions to existing space required to support programmatic activities to proceed as planned and scheduled.

Repair, Restoration, and Alteration of Facilities
(Includes National Zoological Park)
FY 2000–FY 2005

(Dollars in millions)

CATEGORY TITLE	FY 2000 Request	FY 2001 Scenario 3	FUTURE REQUIREMENTS				
	Federal	Federal	FY 2002	FY 2003	FY 2004	FY 2005	Outyear Costs
Major Capital Renewal							
National Museum of Natural History	10.3	10.7	6.6	8.5	8.8	13.8	
Patent Office Building	8.0	17.0	17.0	18.0			
Arts and Industries Building	4.5	2.0	9.6	11.0	17.5	16.7	
Smithsonian Castle	.5	0.0	0.0	2.0	2.0	0.0	
National Air and Space Museum	0.0	0.0	0.0	0.0	0.5	0.0	
Renwick Gallery	0.0	0.0	0.3	0.0	0.0	0.0	
National Zoological Park	0.9	4.6	4.2	2.8	2.9	3.0	
SUBTOTAL	24.2	34.3	37.7	42.3	31.7	33.5	ONGOING
Code Compliance and Security							
Fire Detection and Suppression	0.8	0.7	0.7	1.2	1.0	2.2	
Access, Safety and Security	4.0	5.6	4.8	2.5	6.0	5.7	
SUBTOTAL	4.8	6.3	5.5	3.7	7.0	7.9	ONGOING
Infrastructure Repairs and Modifications							
General Repairs	6.8	7.4	8.7	6.8	8.9	7.7	
Façade, Roof and Terrace Repair	1.9	3.6	1.5	1.0	5.4	3.9	
Utility System Repair	5.2	6.4	4.6	4.2	5.0	5.0	
R&R Planning, Design and Inspection	2.0	2.0	2.0	2.0	2.0	2.0	
Alterations and Modifications	3.0	4.0	5.0	6.0	6.0	6.0	
SUBTOTAL	18.9	23.4	21.8	20.0	27.3	24.6	ONGOING
GRAND TOTAL	47.9	64.0	65.0	66.0	66.0	66.0	ONGOING

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  - Visitor Information and Associates' Reception Center
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- Smithsonian Productions
- Special Events and Conference Services

The Provost

Museums and Research Institutes

Anacostia Museum/Center for African American History and Culture
Archives of American Art
Arthur M. Sackler Gallery/Freer Gallery of Art
Center for Folklife and Cultural Heritage
Cooper-Hewitt, National Design Museum
Hirshhorn Museum and Sculpture Garden
National Air and Space Museum
National Museum of African Art
National Museum of American Art
-- Renwick Gallery
National Museum of American History
National Museum of the American Indian
National Museum of Natural History
-- Museum Support Center
National Portrait Gallery
National Postal Museum
National Zoological Park
Smithsonian Astrophysical Observatory
Smithsonian Center for Latino Initiatives
Smithsonian Center for Materials Research and Education
Smithsonian Environmental Research Center
Smithsonian Tropical Research Institute

Education, Museum, and Scholarly Services

Exhibits Central
Fellowships and Grants
International Relations
National Science Resources Center
Program for Asian Pacific American Studies
Smithsonian Institution Archives
Smithsonian Institution Libraries
Smithsonian Institution Press
Smithsonian Institution Traveling Exhibition Service
Smithsonian Office of Education
-- Center for Museum Studies
Sponsored Projects

Other support services:
Accessibility Program
Institutional Studies
Scientific Diving Program

August 1, 1999

Smithsonian Institution
FY 2001 - FY 2005 Estimates Based on Scenario 3
(Dollars in Millions)

SALARIES AND EXPENSES										
FY 2000 Congressional Request	4,300	380.5								
	FTEs	FY 2001	FTEs	FY 2002	FTEs	FY 2003	FTEs	FY 2004	FTEs	FY 2005
Non-Recurring Costs	-20	-1.1	-35	-1.4	-35	-1.4	-35	-1.4	-35	-1.4
Mandatory Increases for Sustaining Operations		15.1		18.3		23.9		26.5		29.1
Program Increases:										
Facilities:										
NMAI (a)	35	8.7	169	16.6	240	13.1	240	6.5	240	6.5
NASM Dulles Center (a)	5	0.6	14	3.7	53	7.4	72	9.9	73	9.7
POB (a)	0	0	0	0	22	3.0	22	3.0	22	1.0
SAO, Hilo Base Facility	0	0	0	0	0	0.1	0	0.1	0	0.1
SAO, Veritas	0	0	0	0	1	0	1	0.1	1	0.1
NZP Water Exhibit	0	0	4	0.2	4	0.2	4	0.1	4	0.1
STRI, Jacana Boat	0	1.7	0	0	0	0	0	0	0	0
STRI, Gamboa Complex	0	0	0	0	0	0	0	0.1	0	0.1
SERC Infrastructure	0	0	0	0	0	0	4	0.4	4	0.4
Subtotal, Facilities	40	11.0	187	20.5	320	23.8	343	20.2	344	18.0
Integrated Science for Ecological Challenges Subtotal	27	2.5	27	2.5	27	2.5	27	2.5	27	2.5
NMNH, Field Emssn. Transmssn. Electron Micro.	2	1.8	2	1.8	0	0	0	0	0	0
STRI, Free Air Carbon Dioxide Enhancement (FACE) Proj.	0	0	0	1.2	0	1.2	0	0	0	0
Public Education & Exhibition Reinstallation Pool	0	3.0	0	3.0	0	3.0	0	3.0	0	3.0
Institution-Wide Requirements (IRM Pool)	0	4.8	0	4.8	0	4.8	0	4.8	0	4.8
Administrative Applications (IRM Pool)	5	5.0	15	5.0	15	5.0	15	5.0	15	2.0
Workload Increases	15	1.6	26	2.7	28	2.8	28	2.8	28	2.8
TOTAL SALARIES AND EXPENSES	**4,369**	**424.2**	**4,522**	**438.9**	**4,655**	**446.1**	**4,678**	**443.9**	**4,679**	**441.3**

	FTEs	FY 2001	FTEs	FY 2002	FTEs	FY 2003	FTEs	FY 2004	FTEs	FY 2005
CAPITAL PROGRAM										
Repair, Restoration and Alteration of Facilities										
--R&R Program		60.0		60.0		60.0		60.0		60.0
--Alteration and Modifications		4.0		5.0		6.0		6.0		6.0
Subtotal		64.0		65.0		66.0		66.0		66.0
Construction										
--SAO, Hilo Base Building		4.5								
--SERC, Infrastructure		1.0		3.8						
--NZP, Water Exhibit		1.0								
--STRI, Gamboa Complex				2.5						
--SAO, Veritas				1.0		3.5				
Subtotal		6.5		7.3		3.5				
TOTAL, CAPITAL PROGRAM		**70.5**		**72.3**		**69.5**		**66.0**		**66.0**
TOTAL, ALL ACCOUNTS	**4,369**	**494.7**	**4,522**	**511.2**	**4,655**	**515.6**	**4,678**	**509.9**	**4,679**	**507.3**

(a) Includes support programs and funding, such as OPP, OPS, OEMS, and SIL.

SMITHSONIAN INSTITUTION
PROJECTED OUTLAYS IN THE OUTYEARS
FY 2001 - FY 2005
(Dollars in Millions)

	FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	Budget Authority	Outlays	Budget Authority	Outlays	Budget Authority	Outlays	Budget Authority	Outlays	Budget Authority	Outlays
Salaries & Expenses	424	425	439	440	446	447	444	445	441	442
Repair, Restor.& Alt.	64	57	65	70	66	75	66	76	66	76
Construction	7	16	7	18	4	15	0	12	0	9
Special Foreign Curr.	2	2	1	1	0	0	0	0	0	0
Total	497	500	512	529	516	537	510	533	507	527

Dollars in thousands
FTE = Full Time Equivalent

SMITHSONIAN INSTITUTION

APPLICATION OF NONAPPROPRIATED TRUST FUNDS - Summary

		General Trust						Donor / Sponsor Designated						Government Grants and Contracts					
		FY 1090		FY 2000		FY 2001		FY 1099		FY 2000		FY 2001		FY 1999		FY 2000		FY 2001	
		FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate
	Museums and Research Institues																		
6900	Anacostia Museum & Ctr for Afr.Amer.History	4	917	4	672	4	672	1	228	1	250	1	250	0	0	0	0	0	0
4800	Archives of American Art	0	136	0	106	0	107	10	635	10	681	10	635	0	0	0	0	0	0
5400	Arthur M.Sackler Gallery/Freer Gallery of Art	0	1,278	0	420	0	390	43	6,488	43	5,878	43	6,048	0	0	0	0	0	0
5100	Center for Folklife and Cultural Heritage	14	1,072	15	1,111	15	1,111	0	400	2	750	0	700	0	0	0	0	0	0
5800	Cooper-Hewitt, National Design Museum	26	2,660	26	2,649	26	2,645	2	2,761	2	2,813	2	2,481	0	18	0	6	0	0
5600	Hirshhorn Museum & Sculpture Garden	2	827	3	700	3	663	0	2,642	0	2,750	0	3,050	0	0	0	0	0	0
3800	National Air and Space Museum	5	7,732	19	4,143	18	1,581	13	4,678	17	7,897	17	107,047	3	432	3	432	3	432
5700	National Museum of African Art	1	541	2	443	2	403	0	19	0	108	0	130	0	0	0	0	0	0
5300	National Museum of American Art	9	1,650	11	1,304	11	1,261	2	2,785	6	2,970	6	3,385	0	0	0	0	0	0
5500	National Museum of the American History	25	5,352	23	3,780	25	3,143	49	2,336	74	6,702	74	6,023	46	2,700	46	2,800	46	2,900
5000	National Museum of the Amer. Indian	5	1,769	5	1,304	5	1,330	1	258	1	548	1	597	0	0	0	50	0	50
3300	National Museum of Natural History	16	3,876	15	3,221	15	2,974	27	18,896	36	15,651	27	5,294	10	3,571	10	2,560	11	1,189
5200	National Portrait Gallery	2	565	2	279	1	200	2	190	1	410	1	416	0	0	0	0	0	0
3500	National Zoological Park	9	1,244	7	648	7	632	0	972	0	992	0	1,012	3	500	3	515	3	530
4000	Smithsonian Astrophysical Observatory	63	12,749	63	12,435	63	12,435	10	2,368	12	2,719	12	2,775	248	40,819	285	56,119	285	56,000
6400	Smithsonian Center for Materials Research	0	203	0	35	0	35	0	18	0	18	0	18	0	1	0	0	0	0
3900	Smithsonian Environment Research Center	1	314	1	232	1	232	0	222	0	180	0	110	31	1,000	31	1,100	31	1,200
3400	Smithsonian Tropical Research Institute	6	855	7	897	7	897	2	1,790	9	1,770	9	1,820	0	1,700	0	1,500	0	1,500
	Total	188	43,740	203	34,379	203	30,711	162	47,686	214	53,087	203	141,791	341	50,741	378	65,082	379	63,801
	Program Support and Outreach																		
3100	--VIARC	24	1,561	24	1,454	24	1,454	0	0	0	101	0	0	0	0	0	0	0	0
6500	--Office of Public Affairs	6	941	6	841	6	841	0	0	0	0	0	0	0	0	0	0	0	0
8500	--Smithsonian Press/Smithsonian Productions	0	3	0	0	0	0	0	73	0	15	0	15	0	0	0	0	0	0
1900	--Office of Fellowships and Grants	4	2,284	4	2,968	4	2,968	0	152	0	153	0	163	0	0	0	0	0	0
7100	--Center for Museum Studies	0	36	0	24	0	24	0	24	0	24	0	24	0	0	0	0	0	0
3200	--Smithsonian Office of Education	6	489	6	513	6	506	0	45	0	25	0	25	0	0	0	0	0	0
6200	--National Science Resources Center	9	725	9	696	9	696	8	432	8	1,475	8	900	6	1,964	6	2,126	6	2,214
3600	--Latino Programming	5	559	5	443	5	443	0	0	0	0	0	0	0	0	0	0	0	0
7200	--Office of Exhibits Central	1	97	1	100	1	103	0	0	0	0	0	0	0	0	0	0	0	0
3700	--Museum Support Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700	--Smithsonian Institution Archives	2	147	2	189	2	183	0	10	0	11	0	10	0	0	0	0	0	0
6300	--Smithsonian Institution Libraries	11	1,036	11	922	11	908	1	118	1	433	1	825	0	0	0	0	0	0
6100	--Smithsonian Inst. Traveling Exh.Svc.	8	646	8	625	8	610	0	1,543	0	1,048	0	1,173	0	31	0	41	0	17
	Total	76	8,524	76	8,775	76	8,736	9	2,397	9	3,285	9	3,135	6	1,995	6	2,167	6	2,231
	Administration	215	20,885	215	22,478	215	25,473	0	465	0	1,435	0	2,634	0	0	0	3,000	0	2,000

Dollars in thousands
FTE = Full Time Equivalent

SMITHSONIAN INSTITUTION

APPLICATION OF NONAPPROPRIATED TRUST FUNDS - Summary

		General Trust						Donor / Sponsor Designated						Government Grants and Contracts					
		FY 1999		FY 2000		FY 2001		FY 1999		FY 2000		FY 2001		FY 1999		FY 2000		FY 2001	
		FTE	Estimate	FTE	Estimate	FTE	Esimale	FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate	FTE	Estimate
	Facilities Services																		
2500	Office of Protection Services	0	161	0	136	0	136	0	0	0	0	0	0	0	0	0	0	0	0
4700	Office of Physical Plant	4	2,133	4	2,149	4	2,147	3	164	3	196	3	190	0	0	0	0	0	0
	Total	4	2,294	4	2,285	4	2,283	3	164	3	196	3	190	0	0	0	0	0	0
TOTAL		483	75,443	498	67,917	498	67,203	174	50,712	226	58,003	215	147,750	347	52,736	384	70,249	385	68,032

Visits to the Smithsonian
FY 1994 – FY 1998

MUSEUM	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998
MALL					
SI Castle	1,615,846	1,743,169	1,722,551	1,812,172	1,890,838
A&I Building	941,957	917,027	725,620	986,348	875,853
Natural History	5,734,342	5,842,987	5,171,318	5,859,717	5,579,039
Air and Space	8,566,238	8,297,873	6,935,989	8,348,096	10,238,890
Freer Gallery	490,379	444,090	321,005	290,939	330,104
Sackler Gallery	193,321	198,827	164,395	176,627	207,653
African Art	319,324	307,382	232,352	227,703	232,939
Ripley Center	204,495	153,954	141,548	134,579	300,147
American History	4,918,035	4,828,078	4,578,490	5,106,387	5,579,039
Hirshhorn	820,429	809,435	742,139	767,229	829,782
OFF MALL					
Amer Art/Portrait	383,444	400,258	298,150	374,494	550,087
Renwick Gallery	123,329	117,066	98,832	132,481	130,700
Anacostia [1]	41,671	50,031	39,900	7,206	26,100
Cooper/Hewitt [2]	104,721	89,073	25,246	100,804	131,949
American Indian[3]	30,022	321,585	318,891	577,962	615,697
National Zoo [4]	3,300,000	3,000,000	2,700,000	2,700,000	2,700,000
Postal Museum	373,293	381,042	341,210	450,288	423,760
TOTAL	**28,160,846**	**27,901,877**	**24,557,636**	**28,053,032**	**30,642,577**

[1] Closed to the public December 1996 through January 1998 and September 1998
[2] Galleries closed to the public August 1995 through September 1996; the Garden remained open.
[3] The George Gustav Heye Center opened to the public in October 1994 in New York City.
[4] Number of visitors based on a sampling system.

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE August 27, 1999

PROJECT NO.: **965105**
UNIT: **Smithsonian Astrophysical Observatory**
PROJECT NAME: **Submillimeter Array Base Facility**

CONSTRUCTION COST:	$4.2 million base building budget $800,000 other project costs (design, move-in, etc)
FUNDING SOURCES:	$500,000 non-Federal grant for planning & design $4.5 million Federal appropriation for construction, equipment & furnishings
CONSTRUCTION START:	October 2000
CONSTRUCTION COMPLETE:	December 2001

DESCRIPTION: The Submillimeter Array (SMA) is a major initiative by the Smithsonian to place an array of telescopes near the summit of Mauna Kea in Hawaii. The SMA will consist of eight antennas whose signals are combined to produce very finely detailed images. Because of its pioneering character, the array is expected to produce fundamentally new insights into many processes involved in the formation and evolution of stars, planets and galaxies. The operation of the instrument will be complex and will require the support of many scientists, engineers and technicians on a daily basis. Because of the difficulty of working at 14,000 feet-for both mental and physical activities, it is essential to have a base facility near sea level. Repairs, operations, development and much of the scientific data analysis will be done from the base facility with only a small crew traveling to the instrument on any given day. The facility will include about 16,000 useable square feet of electronics laboratories, office and support space. The building will be constructed near the base operations facilities of other telescopes in the University of Hawaii, Hilo Science Park. This location provides excellent access to the summit roads, communications hub, and to a larger scientific community with which to exchange ideas. The Smithsonian expects to have extremely important cooperative observing programs with two other radio telescopes with base facilities at the site, and this arrangement will contribute to attracting qualified personnel to what would otherwise be a remote and isolated work site. Our partners at the Academia Sinica's Institute of Astronomy and Astrophysics (ASIAA) have agreed to contribute design funding in FY 2000.

CURRENT STATUS: Through a competitive process, the Smithsonian selected the A/E firm Urban Works of Honolulu, Hawaii, to provide planning and design services. We expect to award a work order to begin site surveys and concept design during Fiscal Year 1999. The full facility design will be complete and ready for contractor solicitations by October 2000.

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	SMA Base Facility - Hilo, HI
Project Title	SMA Base Facility
Project Description & Purpose	Administrative Offices, Laboratories & Support functions
	for Sub-millimeter Array Observatory
Projected Gross Square Footage	16000
Authorization Date (or Projected)	10/1/00
Design Start/ Completion Dates	10/30/99 to 9/30/00
Construction Start/Completion Dates	10/30/00 to 12/30/01
Beneficial Occupancy Date	11/30/01
Full Occupancy Date	12/30/01

Responding Office	SAO SMA
Date	4/28/99
Purpose	FY2001-FY2005 Planning Period

NOTES

Construction Project Funding Sources $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
FUNDING SOURCES							
Federal			4,500				
Non-Federal 3/		500					
TOTAL CONSTRUCTION FUNDING SOURCES		500	4,500				

Construction Project Costs $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Programming and Planning		250					
Design		250					
Site Preparation 1/			600				
Construction			3,600				
Equipment and Furnishings			200				
Project & Construction Management			100				
Other 2/							
TOTAL CONSTRUCTION COSTS		500	4,500				

Construction Outlays $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Federal		500	3,000	1,500			
Non-Federal							

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

3/ SAO Expects to raise non-federal funds to begin Design in FY 2000

NA - not applicable.

TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE	SMA Base Facility - Hilo, HI	DAT 04/28/99 0	Page 2
RESPONDING OFFICE				

Operating Funding Sources $(000)s	PRIOR YR FTE	PRIOR YR Dollars	FY 2000 FTE	FY 2000 Dollars	FY 2001 FTE	FY 2001 Dollars	FY 2002 FTE	FY 2002 Dollars	FY 2003 FTE	FY 2003 Dollars	FY 2004 FTE	FY 2004 Dollars	FY 2005 + FTE	FY 2005 + Dollars
FUNDING SOURCES														
Federal 4/						10		105		106		107		108
Non-Federal														
TOTAL OPERATING FUNDING SOURCES														

Operating Costs $(000)s	PRIOR YR FTE	PRIOR YR Dollars	FY 2000 FTE	FY 2000 Dollars	FY 2001 FTE	FY 2001 Dollars	FY 2002 FTE	FY 2002 Dollars	FY 2003 FTE	FY 2003 Dollars	FY 2004 FTE	FY 2004 Dollars	FY 2005 + FTE	FY 2005 + Dollars
PROGRAM COSTS														
Staff: NOTE: SMA staff are already on board - No new staff required to operate facility						0		0		0		0		0
Other Objects, ongoing														
Initial Automation(hard/software) 1/						0		0		0		0		0
Initial furnishings and equipment NOTE: Included in construction costs														
Other objects, one-time														
Building management & maintenance 5/						0		40		50		50		50
Move costs						0		10						
Special costs 2/														
TOTAL PROGRAM COSTS		0		0		0		50		50		50		50
FACILITIES SERVICES														
Security (Service Contract)														
Physical Plant														
Design & Construction Support														
Operations & Maintenance (Service Contracts)														
Utilities & Communications														
Utilities & Postage						10		35		36		37		38
Communications								20		20		20		20
TOTAL FACILITIES SVCS. COSTS		0		0		10		55		56		57		58
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS		0		0		0		0		0		0		0
GRAND TOTAL OPERATING 4/		0		0		10		105		106		107		108

Operating Cost Outlays $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Federal							
Non-Federal							

1/ Include installation and communication requirements. NOTE: SAO has already purchased this equipment

2/ Include exhibit installation costs here.

4/ SAO is not requesting additional operating funds. SAO plans to cover these costs with operating funds in the SAO budget plan.

3/ Include Health Services costs here.

5/ Includes maintenance contracts for fire & security systems and HVAC equipment

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE

August 27, 1999

PROJECT NO.: **004401**
UNIT: **Smithsonian Environmental Research Center**
PROJECT NAME: **Infrastructure Improvement**

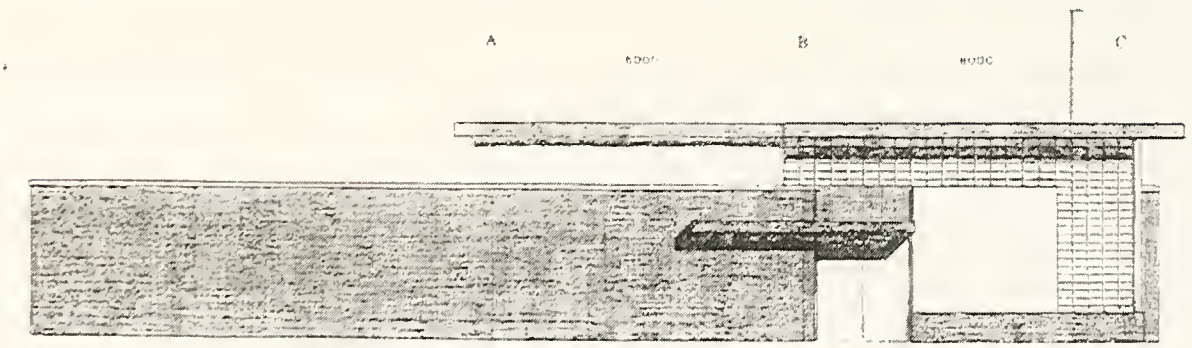
CONSTRUCTION COST:	$3.9 million base construction budget $900,000 other project costs (design, furnishings, etc)
FUNDING SOURCES:	$4.8 million-Federal appropriation for planning, design, construction, equipment & furnishings
CONSTRUCTION START:	March 2002
CONSTRUCTION COMPLETE:	March 2003

DESCRIPTION: Physical plant infrastructure includes those basic facilities, services and installations needed for the efficient functioning of the physical plant. The infrastructure for outlying stations such as Smithsonian Environmental Research Center (SERC) includes roads, bridges, parking areas, sidewalks, piers, water supply and treatment systems, sewage handling and treatment systems, stormwater management, electric power, communications networks, fire protection and security systems.

Over the past 20 years, the infrastructure at SERC has not kept pace with codes or program growth. All systems are currently operating at or beyond design limits. This project will implement critically needed improvements in the following areas: stormwater management, public access road, water and electrical service capacity and energy efficiency.

A Central Utilities plant is planned as a key element of the infrastructure improvement project, to reduce annual utility costs and improve energy efficiency. The new central plant will service existing core facilities including the Laboratory building, Conference/Dormitory building, Library, Maintenance Shop, and Administration building. Although capacity will be sufficient to accommodate some minimal future expansion, the primary purpose is to replace existing inefficient individual package units.

CURRENT STATUS: A preliminary concept study was completed in 1994, and cost savings were re-validated in 1999. This project is on hold until funds are approved to begin the design effort.



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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	SERC
Project Title	Infrastructure Improvement
Project Description & Purpose	Construct Central Utility Plant, Stormwater Management Plant and road improvements
Projected Gross Square Footage	2400 sf
Authorization Date (or Projected)	10/1/00
Design Start/ Completion Dates	10/30/00 to 9/30/01
Construction Start/Completion Dates	3/1/02 to 3/30/03
Beneficial Occupancy Date	3/1/03
Full Occupancy Date	3/30/03

Responding Office	SERC
Date	4/28/99
Purpose	FY2001-FY2005 Planning Period

NOTES

Construction Project Funding Sources $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
FUNDING SOURCES							
Federal	25		1000	3800			
Non-Federal							
TOTAL CONSTRUCTION FUNDING SOURCES							

Construction Project Costs $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Programming and Planning	25		200				
Design			500				
Site Preparation 1/			300				
Construction				3600			
Equipment and Furnishings				100			
Project & Construction Management				100			
Other 2/							
TOTAL CONSTRUCTION COSTS	25		1000	3800			

Construction Outlays $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Federal	25		700	2300	1800		
Non-Federal							

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE SERC Infrastructure Improvement	DATE 4/28/99 Page 2
RESPONDING OFFICE		

Operating Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal												402		403
Non-Federal														
TOTAL OPERATING FUNDING SOURCES														

Operating Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff														
Other Objects, ongoing														
Initial Automation(hard/software) 1/								0		0		0		0
Initial furnishings and equipment NOTE: Included in construction costs														
Other objects, one-time														
Building management & maintenance														
Move costs														
Special costs 2/														
TOTAL PROGRAM COSTS		0		0		0		0		0		0		0
FACILITIES SERVICES														
Security NOTE: no additional security requirements if funding received to meet current security requirements														
Physical Plant														
Design & Construction Support						0		0		0		0		0
Operations & Maintenance (3 UOM, 1 Crafts)											4	350	4	350
Utilities & Communications														
Utilities & Postage 4/										50		52		53
Communications														
TOTAL FACILITIES SVCS. COSTS		0		0		0		0	0	50	4	402	4	403
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS		0		0		0		0		0		0		0
GRAND TOTAL OPERATING		0		0		0		0	0	50	4	402	4	403

Operating Cost Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements. NOTE: SAO has already purchased this equipment

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

4/ New Central Utility Plant should generate a cost savings in annual operating costs and no additional postage or communications costs.

Smithsonian Institution

National Zoological Park
Office of Facilities Management and Construction

CURRENT CAPITAL PROJECT UPDATE August 27, 1999

PROJECT NO.:
UNIT: **National Zoological Park**
PROJECT NAME: **Water Exhibit**

CONSTRUCTION COST:	$2.7 million $1 million other project costs (design, exhibit, etc.)
FUNDING SOURCES:	$3.2 million Federal appropriation for planning, design and construction $0.5 million Non-Federal
CONSTRUCTION START:	Sitework – April 2000
CONSTRUCTION COMPLETE:	April 2001 Exhibit open to the public April 2001

DESCRIPTION: The function of this exhibit is to introduce the zoo visitor to the wonder and excitement of the water world – two thirds of the earth's habitats and the cradle of life. Water is a precious resource, it is the source of all life, and it is a threatened resource that we can protect. The project is located on a 3-acre site with existing ponds, adjacent to the lower entrance to the Zoo, near Rock Creek. The exhibit will be entered through a water feature that expresses the beauty and wonder of water. Upon entry, visitors will encounter two zones to the exhibit: a quiet contemplative area sited against the largest pond and an active area located between the ponds and the Mane Restaurant picnic area. The contemplative area will teach visitors about the earth as a "water planet," about water biology and about the role that water has played in civilization, including water in music and art. The active water play area will address watersheds, the water cycle and how people use water in agriculture, and to power our cities, and homes. Throughout the exhibit, are opportunities to connect with research and information from other parts of the Smithsonian.

CURRENT STATUS: A final concept design for the exhibit has been developed. Scopes of work for construction documents for landscape architecture and exhibit design are being finalized for contract negotiations starting October 1999. The scope of work for site sculpture design is being developed with award planned for Winter 2000.

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	National Zoological Park
Project Title	Water Exhibit
Project Description & Purpose	Renovation of existing area for Smithsonian BioPark exhibit
Projected Gross Square Footage	3 acres
Authorization Date (or Projected)	1993
Design Start/ Completion Dates	1998 to May 2000
Construction Start/Completion Dates	site preparation: Sept 2000; construction: Apr 2001
Beneficial Occupancy Date	2001
Full Occupancy Date	2001

Responding Office	NZP
Date	8/31/99
Purpose	FY2001-FY2005 Planning Period

NOTES

Construction Project Funding Sources $(000)s	PRIOR YR.	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
FUNDING SOURCES							
Federal	2,400	0	1,000				
Non-Federal	100	0	400				
TOTAL CONSTRUCTION FUNDING SOURCES	2,500	0	1,400				

Construction Project Costs $(000)s	PRIOR YR.	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Programming and Planning	300						
Design	450	350					
Site Preparation 1/		400					
Construction			2,400				
Equipment and Furnishings							
Project & Construction Management							
Other 2/							
TOTAL CONSTRUCTION COSTS	750	750	2,400				

Construction Outlays $(000)s	PRIOR YR.	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Federal	750	750	1,900				
Non-Federal			500				

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

Capital Budget: Operating Cost Projection	PROJECT TITLE NZP Water Exhibit	DAT 08/31/99	Page 2
RESPONDING OFFICE			

Operating Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal							1	100	1	100	1	100	1	100
Non-Federal							3	129	3	129	3	129	3	129
TOTAL OPERATING FUNDING SOURCES							4	229	4	229	4	229	4	229

Operating Costs $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff							4	129	4	129	4	189	4	189
Other Objects, ongoing														
Initial Automation(hard/software) 1/														
Initial furnishings and equipment														
Other objects, one-time														
Building management & maintenance								20		20		20		20
Move costs														
Special costs 2/								10		10		10		10
TOTAL PROGRAM COSTS							4	219	4	219	0 4	219	4	219
FACILITIES SERVICES														
Security														
Physical Plant - NZP														
Design & Construction Support														
Operations & Maintenance														
Utilities & Communications								10		10		10		10
Utilities & Postage														
Communications														
TOTAL FACILITIES SVCS. COSTS								10		10		10		10
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS														
GRAND TOTAL OPERATING							4	229	4	229	4	229	4	229

Operating Cost Outlays $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE

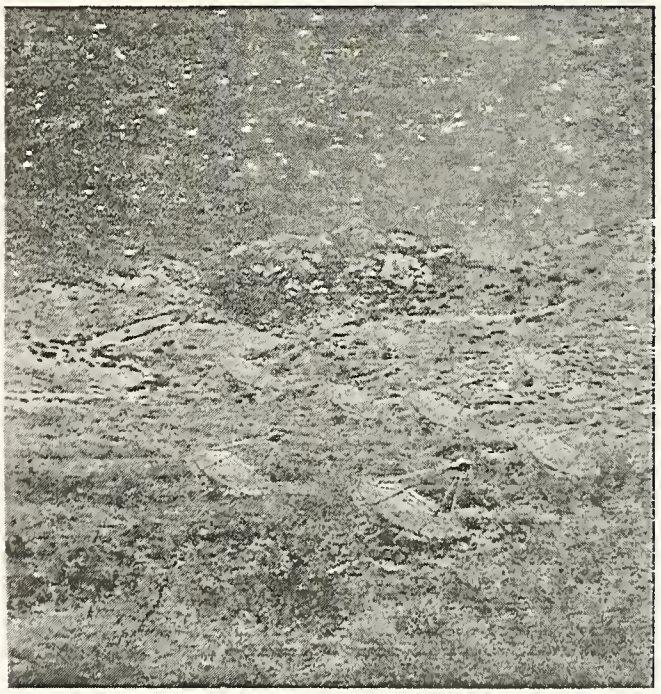
August 27, 1999

PROJECT NO.: **965110**
UNIT: **Smithsonian Astrophysical Observatory**
PROJECT NAME: **VERITAS Site Development**

CONSTRUCTION COST:	$3.9 million base construction budget $600,000 other project costs (design, furnishings, etc)
FUNDING SOURCES:	$4.5 million-Federal appropriation for planning, design, construction, equipment & furnishings
CONSTRUCTION START:	July 2002
CONSTRUCTION COMPLETE:	December 2003

DESCRIPTION: VERITAS is a proposed major ground-based gamma-ray observatory to be built at the Smithsonian's Whipple Observatory in southern Arizona. It will consist of an array of seven 10-meter diameter imaging Cherenkov telescopes designed to conduct gamma-ray observations in the energy range of 50 GeV - 50 TeV. The array will be the most sensitive gamma-ray telescope in the world and will provide valuable insight into supernova remnants, gamma-ray pulsars, active galactic nuclei, gamma-ray bursts, and the origins of the universe. The preferred site is in the Montosa Canyon near the SAO Base Camp at the approach to Mt. Hopkins. Site development requirements include extending roads, utilities, communication lines, and constructing foundations, instrument housings, and a control building.

CURRENT STATUS: Work started on an environmental assessment of the Montosa Canyon site in 1998 and is proceeding to an expected completion during FY 2000. Planning and programming for the VERITAS instruments are currently underway. Site surveys, studies, and concept plans for the site development portion of the project can begin soon after approval of the Environmental Assessment Report.



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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	F. L. Whipple Observatory
Project Title	Veritas Site Development
Project Description & Purpose	Construct roads, foundations, utilities & control buildings
	for gamma-ray observatory
Projected Gross Square Footage	6000
Authorization Date (or Projected)	10/1/01
Design Start/ Completion Dates	10/30/01 to 6/30/02
Construction Start/Completion Dates	7/30/02 to 12/30/03
Beneficial Occupancy Date	11/30/03
Full Occupancy Date	12/30/03

Responding Office	SAO
Date	8/31/99
Purpose	FY2001-FY2005 Planning Period

NOTES:

Construction Project Funding Sources $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
FUNDING SOURCES							
Federal				1,000	3,500		
Non-Federal							
TOTAL CONSTRUCTION FUNDING SOURCES				1,000	3,500		

Construction Project Costs $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Programming and Planning				150			
Design				350			
Site Preparation 1/				500	1,000		
Construction					2,400		
Equipment and Furnishings					100		
Project & Construction Management							
Other 2/							
TOTAL CONSTRUCTION COSTS				1,000	3,500		

Construction Outlays $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Federal				1,000	3,500		
Non-Federal							

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE	Veritas Site Development, F. L. Whipple Observatory	DATE 08/31/99	Page 2
RESPONDING OFFICE				

Operating Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal									1	62	1	75	1	75
Non-Federal														
TOTAL OPERATING FUNDING SOURCES														

Operating Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff: one WG-7									1	40	1	40	1	40
Other Objects, ongoing														
Initial Automation(hard/software) 1/														
Initial furnishings and equipment														
Other objects, one-time														
Building management & maintenance 4/										10		20		20
Move costs										5				
Special costs 2/														
TOTAL PROGRAM COSTS		0		0		0		0	1	55	1	60	1	60
FACILITIES SERVICES														
Security (Service Contract)														
Physical Plant														
Design & Construction Support														
Operations & Maintenance (Service Contracts)														
Utilities & Communications														
Utilities & Postage										5		10		10
Communications										2		5		5
TOTAL FACILITIES SVCS. COSTS		0		0		0		0		7		15		15
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS		0		0		0		0		0		0		0
GRAND TOTAL OPERATING 4/		0		0		0		0	1	62	1	75	1	75

Operating Cost Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

4/ Includes maintenance contracts for fire & security systems and HVAC equipment

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE

August 27, 1999

PROJECT NO.: **985005**
UNIT: **Smithsonian Tropical Research Institute**
PROJECT NAME: Gamboa Laboratory and Facilities

CONSTRUCTION COST: $2.15 million
$ 0.45 million other project costs (design, move-in, etc)
FUNDING SOURCES: $2.5 million Federal appropriation for planning, design & Construction in FY 03

CONSTRUCTION START: April 2004
CONSTRUCTION COMPLETE: August 2005

DESCRIPTION: The project is located on a 11.25 acre site at the northeastern corner of the Gamboa Townsite, located a short 30 minute drive north of downtown Panama City, Republic of Panama. The main Laboratory and Office building occupies over 15,500 square feet of program area including four labs and office suites, several classrooms, a seminar/reference room, a kitchen/dining area and lounge, and administrative offices. Also included in the plan is the construction of other structures, some strictly dedicated for research (glass houses, a flight cage, frog ponds, animal cages, a vivarium, an insectary, growth chambers and open plots for experimental plantings), buildings for maintenance and/or support (storage building, small maintenance shop, backup electrical generator), and a sewage treatment plant required in order to comply with current regulations. The property will be fenced and guarded 24 hours. This 11.25 acre site is located adjacent to a parcel of land (approx. 167 acres) consisting of dense tropical forest which provides a unique opportunity for research making Gamboa an outstanding site for terrestrial research in the tropics which will draw scientists from all over the world.

CURRENT STATUS: A significant milestone was reached on April 1999 when the Interoceanic Region Authority (ARI) signed with STRI a long-term lease for the site This contract is for a renewable 20 year term and requires the Institution to invest $1 Million in constructing and furnishing this site. However, some construction activities must start by December 2000 at least (a one year extension on this clause may also be requested).

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data			
Facility (Building)	STRI		
Project Title	Gamboa Lab & Support Facility		
Project Description & Purpose	laboratories & office space to support research		
Projected Gross Square Footage	10,700 SF		
Authorization Date (or Projected)	to be determined		
Design Start/ Completion Dates	Dec 2002	to	June 2003
Construction Start/Completion Dates	April 2004	to	August 2005
Beneficial Occupancy Date	Sept 2004		
Full Occupancy Date	Oct 2004		

Responding Office	STRI
Date	9/10/1999
Purpose	FY2001-FY2005 Planning Period

NOTES:

Construction Project Funding Sources $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
FUNDING SOURCES							
Federal					2,500		
Non-Federal							
TOTAL CONSTRUCTION FUNDING SOURCES							

Construction Project Costs $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Programming and Planning							
Design					300		
Site Preparation 1/							
Construction					2,000		
Equipment and Furnishings					200		
Project & Construction Management							
Other 2/							
TOTAL CONSTRUCTION COSTS					2,500		

Construction Outlays $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Federal					500	1,800	200
Non-Federal							

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.

Capital Budget: Operating Cost Projection	PROJECT TITLE STRI Gamboa Lab & Support Facility	DAT 9/10/1999	Page 2
RESPONDING OFFICE OPP/STRI			

Operating Funding Sources $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal					0	30	0	40	0	40	0	201	4	146
Non-Federal														10
TOTAL OPERATING FUNDING SOURCES					0	30	0	40	0	40	0	201	4	156

Operating Costs $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff													4	70
Other Objects, on-going														
Initial Automation(hard/software) 1/												10		
Initial furnishings and equipment												150		
Other objects, one-time														10
Building management & maintenance														20
Move costs														10
Special costs 2/														
TOTAL PROGRAM COSTS												160	4	115
FACILITIES SERVICES														
Security														
Physical Plant														
Design & Construction Support														
Operations & Maintenance														
Utilities & Communications														
Utilities & Postage								10		10		41		11
Communications						30		30		30		30		30
TOTAL FACILITIES SVCS. COSTS					0	30	0	40	0	40	0	41	0	11
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS														
GRAND TOTAL OPERATING					0	30	0	40	0	40	0	201	4	156

Operating Cost Outlays $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

The National Museum of the American Indian
Design and Construction Office

CURRENT CAPITAL PROJECT UPDATE

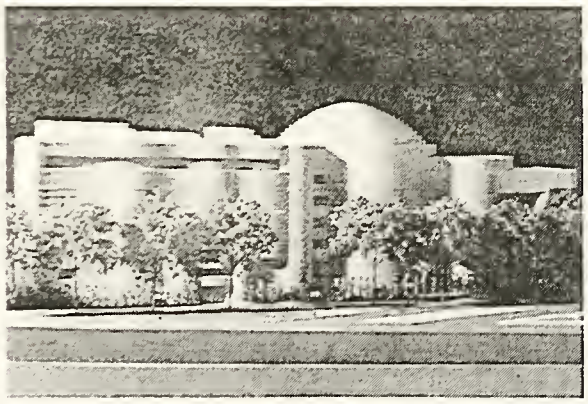
August 27, 1999

PROJECT NO.: **922307**
UNIT: **National Museum of the American Indian (NMAI)**
PROJECT NAME: **Mall Museum**

CONSTRUCTION COST:	$87 million (project budget $110 million)
FUNDING SOURCES:	$73.3 million Federal appropriation for design and construction $36.7 million capital fund-raising campaign (complete)
CONSTRUCTION START:	Sitework, spring 1999; building, spring 2000
CONSTRUCTION COMPLETE:	Building open to public, December 2002

DESCRIPTION: The project is located on the last available site on the National Mall at the foot of the Capitol directly across from the National Gallery of Art. The building will include about 250,000 square feet in four stories and a basement that include: exhibition galleries, a 300-seat theater, a 400-seat cafeteria, retail shop, conference center, resource center, a large central atrium for performances and other public events, museum offices and support spaces. To demonstrate the importance of the natural environment, the building is surrounded by a Native habitat that incorporates water features, Native plantings, a performance space, and an outdoor welcome area. All collection and curatorial spaces are located in Suitland, MD, to maximize public space on the National Mall.

CURRENT STATUS: The completion of construction documents is currently proceeding under the direction of the Smithsonian with the new team of architectural consultants, engineers, technical consultants, and Native designers. The Commission of Fine Arts and The National Capital Planning Commission have approved the project. Ground breaking is scheduled for September 28, 1999. The construction fence, utility relocation and removal of existing sub grade structures will start in early September 1999. Project is still on schedule with opening ceremonies in December 2002.



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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	NMAI
Project Title	Mall Museum
Project Description & Purpose	Construction of a new museum building on the Mall
Projected Gross Square Footage	255,000
Authorization Date (or Projected)	1990
Design Start/ Completion Dates	1995 to 2000
Construction Start/Completion Dates	sitework: 9/99; building spring 2000 to fall 2002
Beneficial Occupancy Date	galleries, elevators & loading dock: Feb 2002; bal.: Nov 2002
Full Occupancy Date	public opening Dec 2002

Responding Office	NMAI
Date	9/15/99
Purpose	FY2001-FY2005 Planning Period

NOTES:
Project budget currently under review for impact of design delays.

Construction Project Funding Sources $(000)s	PRIOR YR.	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
FUNDING SOURCES							
Federal	54,300	19,000					
Non-Federal	3,300	33,400					
TOTAL CONSTRUCTION FUNDING SOURCES	57,600	52,400					

Construction Project Costs $(000)s 3/	PRIOR YR.	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Programming and Planning	1,845						
Design	11,155						
Site Preparation 1/							
Construction	1,000	86,000					
Equipment and Furnishings		10,000					
Project & Construction Management							
Other 2/							
TOTAL CONSTRUCTION COSTS	14,000	96,000					

Construction Outlays $(000)s	PRIOR YR.	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Federal	to be determined once construction budget established						
Non-Federal							

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

3/ Project budget currently under review.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE	NMAI Mall Museum	DATE 9/15/99	Page 2
RESPONDING OFFICE				

Operating Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal	59	6,135	64	8,969	83	15,625	183	21,590	247	18,451	247	17,347	247	17,421
Non-Federal														
TOTAL OPERATING FUNDING SOURCES	59	6,135	64	8,969	83	15,625	183	21,590	247	18,451	247	17,347	247	17,421

Operating Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff	59	4,298	64	4,660	82	5,436	113	7,121	152	8,904	152	8,904	152	8,904
Other Objects, ongoing		1,437		1,609		1,920		2,675		3,219		2,644		2,681
Initial Automation(hard/software) 1/						400		2,384						
Initial furnishings and equipment						500		2,855		565				
Other objects, one-time						1,074		536						
Building management & maintenance					1	85	27	1,132	27	1,132	27	1,132	27	1,132
Move costs														
Special costs 2/		400		2,700		5,731		1,169						
TOTAL PROGRAM COSTS	59	6,135	64	8,969	83	15,146	140	17,872	179	13,820	179	12,680	179	12,717
FACILITIES SERVICES														
Security							25	1,176	50	1,912	50	1,912	50	1,912
Physical Plant														
Design & Construction Support														
Operations & Maintenance							16	1,140	16	1,140	16	1,140	16	1,140
Utilities & Communications														
Utilities & Postage						459		1,182		1,359		1,395		1,432
Communications						20		50		50		50		50
TOTAL FACILITIES SVCS. COSTS						479	41	3,548	66	4,461	66	4,497	66	4,534
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/							2	170	2	170	2	170	2	170
Central Administration Costs														
TOTAL SI COSTS							2	170	2	170	2	170	2	170
GRAND TOTAL OPERATING	59	6,135	64	8,969	83	15,625	183	21,590	247	18,451	247	17,347	247	17,421

Operating Cost Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE

August 27, 1999

PROJECT NO.: **955301**
UNIT: **National Air and Space Museum**
PROJECT NAME: **Dulles Center**

CONSTRUCTION COST:	$145 to $158 million base building budget
	$34.0 million Virginia sitework budget
	$47 million other project costs (design, move-in, etc)
FUNDING SOURCES:	$8.0 million Federal appropriation for planning & design
	$6.0 million Virginia appropriation
	$6.0 million Virginia locality support
	$34.0 million Virginia contribution to infrastructure
	$7.0 million National Air and Space Society
	$130.0 million capital fund-raising campaign
	$35 to $50 million long term debt
CONSTRUCTION START:	Sitework – April 2000 / Building - January 2001
CONSTRUCTION COMPLETE:	January 2003
	Building open to the public December 2003
	Building move-in artifacts – summer 2002 thru fall 2006

DESCRIPTION: The project is located on a 176.5 acre site at the southeastern corner of the Dulles International Airport in Fairfax County, Virginia. The building occupies over 710,000 square feet of program area including: a single-story, arched main aviation hangar and separate space history hangar, both with mezzanines for multi-level viewing of the collections, an administrative and public amenity wing with food court, retail, large format theater, offices, and entry to an upper level restaurant and observation tower. The restoration hangar at the rear of the structure will be on view to the public through a glassed-in overlook. The study collection and archives areas adjacent to the restoration hangar are available to the public by appointment for research and storage.

CURRENT STATUS: The 100% construction documents for the sitework and the building (except for the Route 28 Interchange which must still go through a public hearing process) were finalized and submitted in March. The capital campaign has geared up and is meeting the established goals required to begin sitework construction in the first quarter of 2000. The building construction is scheduled to start in January 2001 and it is anticipated that this goal will be met. The Construction Manager for the project is presently reviewing the overall construction schedule phasing and sequencing to assure that the project can be completed and opened as planned in December 2003.

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	National Air & Space Museum
Project Title	Dulles Center
Project Description & Purpose	Construct New Facility at Dulles Airport for Exhibit Space, Artifact Restoration Area, Collections Storage & Archives, and Support Areas
Projected Gross Square Footage	710,000 sf
Authorization Date (or Projected)	10/01/93
Design Start/ Completion Dates	01/01/96 to 3/15/99
Construction Start/Completion Dates	04/04/00 to January 2003 (Substantial); March 2003 (Final)
Beneficial Occupancy Date	Partial occupancy 06/24/02
Full Occupancy Date	n

Responding Office	Dulles Center Planning
Date	4/15/99
Purpose	FY2001-FY2005 Planning Period

NOTES:

Construction Project Funding Sources $(000)s	PRIOR YR	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
FUNDING SOURCES							
Federal	8,000	0	0	0	0		
Non-Federal	12,680	8,500	117,500	52,330	13,290		
TOTAL CONSTRUCTION FUNDING SOURCES	20,680	8,500	117,500	52,330	13,290		

Construction Project Costs $(000)s	PRIOR YR	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Programming and Planning	1,750						
Design	12,580	200					
Site Preparation 1/		11,600	13,750	8,970	0	0	0
Construction		0	100,000	40,010	11,520	0	0
Equipment and Furnishings		0	0	0	1,260	0	0
Project & Construction Management	200	500	3,000	2,600	360	0	0
Other 2/ [Financial Studies and OPP/ODC]	1,600	750	750	750	150	0	0
TOTAL CONSTRUCTION COSTS	16,130	13,050	117,500	52,330	13,290	0	0

Construction Outlays $(000)s	PRIOR YR	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005 +
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Federal	6,871	1,129					
Non-Federal	8,130	13,050	117,500	52,330	13,290		

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE	Dulles Center Planning/Operations	DATE	Page 2
RESPONDING OFFICE				

Operating Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal	32	1,919	47	3,965	54	4,808	63	8,309	95	11,557	124	14,336	124	14,128
Non-Federal		291												
TOTAL OPERATING FUNDING SOURCES	32	2,210	47	3,965	54	4,808	63	8,309	95	11,557	124	14,336	124	14,128

Operating Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS 12/														
Staff 4/	32	1,919	47	2,842	51	3,155	60	3,820	67	4,354	73	4,784	73	4,890
Other Objects, on-going 5/								360		586		810		833
Initial Automation(hard/software) 1/		40		40		0		1,163		67				
Initial furnishings and equipment 6/														
Other objects, one-time 7/		85		310		80		360		631		331		246
Building management & maintenance 8/										45		95		95
Move costs 9/		141		543		169		1,522		1,323		883		482
Special costs 2/		25		200		1,200		500		330				
TOTAL PROGRAM COSTS	32	2,210	47	3,935	51	4,604	60	7,725	67	7,406	73	6,903	73	6,546
FACILITIES SERVICES														
Security 10/							10	380	23	1,120	46	1,840	46	1,840
Physical Plant														
Design & Construction Support														
Operations & Maintenance 11/				30						500		3,000		3,090
Utilities & Communications														
Utilities & Postage										2,135		2,210		2,273
Communications										35		42		38
TOTAL FACILITIES SVCS. COSTS		0		30		0		380	23	3,790	46	7,092	46	7,241
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries 5/									1	65	1	45	1	45
Environmental Management & Safety 3/					3	204	3	204	4	296	4	296	4	296
Central Administration Costs														
TOTAL SI COSTS					3	204	3	204	5	361	5	331	5	341
GRAND TOTAL OPERATING	32	2,210	47	3,965	54	4,808	63	8,309	95	11,557	124	14,336	124	14,128

G:\Construction Outyear Charts (C1).XLS

Operating Cost Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.
2/ Include exhibit installation costs here.
3/ Include Health Services costs here. Contract costs, as per OEMS advice.
4/ Staff includes existing 32 base positions at Garber.
5/ Includes operations for Archives, Collections Mgmt, Education, Exhibits/AV Maint, IT, Admin, Disaster Prep,, Safety.
6/ FF&E included in construction; non-fixed eqnipment & furnishings included in 1-time costs.
7/ Includes 1-time costs for Education, Exhibits Maint/AV, Admin, Facilities, Vehicles, Health Unit set-up, Safety, plus a contingency line item.
8/ Building Management included with Physical Plant, as an integrated building services contract. Contract nurse requirements included here.
9/ For collections and archives; includes preparations.
10/ Includes MWAA fee for emergency fire, reseue, and security support; 1-time costs; operations.
11/ Also includes basic facilities mgmt costs, as an integrated building services contract (study underway to determine whether to use contract or in-house staff for building operation/maintenance; see also note 8.
12/ Does not include debt service costs on borrowed construction funds.

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE August 1999

PROJECT NO.: **933108 / 933109**
UNIT: **National Museum of Natural History**
PROJECT NAME: **Master Plan – HVAC Renovation**

CONSTRUCTION COST: $130 million construction budget
FUNDING SOURCES: Yearly Federal appropriation for construction

CONSTRUCTION START: 1990
CONSTRUCTION COMPLETE: 2012

DESCRIPTION: The Smithsonian Institution's National Museum of Natural History in Washington, DC, is an international center housing sixty million specimens in reference collections for use by resident and visiting researchers, in their study of the world and its inhabitants. In addition, the wide array of public exhibits attracts millions of visitors annually.

The building has many deficiencies in its envelope, mechanical equipment and controls, fire protection systems, and electrical systems resulting in the inability to maintain the proper environment conducive to the preservation of the Museum's collections and exhibits.

CURRENT STATUS: Since 1990, a new central utilities plant has been built beneath the east parking lot. This new plant services not only the circa 1910 and 1960 buildings, but also the new East and West infill buildings. Two exhibit halls have been renovated to provide swing space within the building for the temporary relocation of personnel and objects out of the construction areas. Construction has just been completed for a portion of the East Wing. Additional construction for the East Wing and parts of the West Wing will begin late 1999.

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	National Museum of Natural History
Project Title	Master Plan - HVAC Renovation
Project Description & Purpose	Upgrade existing HVAC, fire protection, electrical, data,
	and water systems. Abate asbestos, encapsulate lead
Projected Gross Square Footage	1,560,000 existing SF
Authorization Date (or Projected)	not needed
Design Start/ Completion Dates	1985 - 2007
Construction Start/Completion Dates	1990 - 2012
Beneficial Occupancy Date	
Full Occupancy Date	

Responding Office	OPP
Date	9/1/99
Purpose	FY2001-FY2005 Planning Period

NOTES:

Construction Project Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
FUNDING SOURCES														
Federal		49,413		10,305		10,655		6,625		8,520		8,755		13,825
Non-Federal														
TOTAL CONSTRUCTION FUNDING SOURCES		49,413		10,305		10,655		6,625		8,520		8,755		13,825

Construction Project Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Programming and Planning		1,555												
Design		8,000		700		1,000				2,000				3,000
Site Preparation 1/														
Construction		37,158		8,605		8,595		5,805		5,590		7,805		9,825
Equipment and Furnishings														
Project & Construction Management		3,000		500		560		320		430		450		500
Other 2/		700		500		500		500		500		500		500
TOTAL CONSTRUCTION COSTS		49,413		10,305		10,655		6,625		8,520		8,755		13,825

Construction Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal		39,413		15,000		12,000		7,000		9,000		9,500		15,000
Non-Federal														

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE NMNH Master Plan - HVAC Renovation	DAT 09/01/99	Page 2
RESPONDING OFFICE			

Operating Funding Sources $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal														
Non-Federal														
TOTAL OPERATING FUNDING SOURCES		0		0		0		0		0		0		0

Operating Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff														
Other Objects, ongoing														
Initial Automation(hard/software) 1/														
Initial furnishings and equipment														
Other objects, one-time														
Building management & maintenance														
Move costs														
Special costs 2/														
TOTAL PROGRAM COSTS		0		0		No change to operating costs anticipated						0		0
FACILITIES SERVICES														
Security														
Physical Plant														
Design & Construction Support														
Operations & Maintenance														
Utilities & Communications														
Utilities & Postage														
Communications														
TOTAL FACILITIES SVCS. COSTS		0		0		No change to operating costs anticipated						0		0
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS		0		0		No change to operating costs anticipated						0		0
GRAND TOTAL OPERATING		0		0		0		0		0		0		0

Operating Cost Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE September 10, 1999

PROJECT NO.: **943402**
UNIT: **Patent Office Building**
PROJECT NAME: **Major Capital Renewal**

CONSTRUCTION COST: $110 – 120 million
FUNDING SOURCES: $60 million in annual RR&A appropriations
Remainder to be determined
CONSTRUCTION START: July 2000
CONSTRUCTION COMPLETE: June 2003

DESCRIPTION: Constructed between 1836 and 1868, the Patent Office Building houses the National Museum of American Art, the National Portrait Gallery, and the Archives of American Art in 332,000 square feet of space. The building was last renovated in the 1960s, and most of the existing mechanical and electrical systems are now over 30 years old. Other utility systems are seriously deteriorated as well, including electrical panel boards, switch gear and distribution networks, fire protection, plumbing, steam distribution, and communications systems. The building's elevators break down frequently, the window frames are deteriorated and failing, and interior surfaces in a number of areas have been severely damaged by water intrusion. The main entrances to the building and most restrooms are not accessible for persons with disabilities.

The Smithsonian plans a $60 million renewal program in the building that will replace the HVAC, electrical, plumbing, and other utilities systems, as well as upgrade fire protection and communications systems, replace the windows, restore the elevators, abate hazardous materials, and create accessible entrances and restrooms. Improving the building's functionality, enhancing space for public programs and education, and preserving the historical integrity of this landmark building are additional costs. Staff will be relocated to the recently acquired Victor Building.

CURRENT STATUS: The roof is currently being replaced with previously appropriated funds. The design of the renewal program is underway. The building will close to the public in early 2000, and the Smithsonian plans to begin vacating the building in Spring 2000, to allow construction to begin.

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data			
Facility (Building)	Patent Office Building		
Project Title	Major Capital Renewal		
Project Description & Purpose	replacement of building systems (mechanical, electrical, plumbing		
	etc.), convert 60,000SF admin. space to gallery space)		
Projected Gross Square Footage	332,674		
Authorization Date (or Projected)	not needed		
Design Start/ Completion Dates	1998	to	Jun 2000
Construction Start/Completion Dates	Jul 2000	to	Jun 2003
Beneficial Occupancy Date	Jun 2003		
Full Occupancy Date	Jan 2004		

Responding Office	NPG and NMAA
Date	9/10/99
Purpose	FY2001-FY2005 Planning Period

NOTES:

Construction Project Funding Sources $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
FUNDING SOURCES														
Federal (RR&A)		8,636		8,000		17,000		17,000		18,000				
To Be Determined				8,000		17,000		17,000		18,000				
TOTAL CONSTRUCTION FUNDING SOURCES		8,636		16,000		34,000		34,000		36,000				

Construction Project Costs $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Programming and Planning														
Design		8,636												
Site Preparation 1/														
Construction				16,000		34,000		34,000		36,000				
Equipment and Furnishings														
Project & Construction Management														
Other 2/														
TOTAL CONSTRUCTION COSTS		8,636		16,000		34,000		34,000		36,000				

Construction Outlays $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal		2,710		13,926		17,000		17,000		18,000				
To Be Determined				8,000		17,000		17,000		18,000				

1/ Includes landscaping, if required.

2/ Other diserete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE Patent Office Building Major Capital Renewal	DAT 09/10/99 Page 2
RESPONDING OFFICE		

Operating Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal						(200)	6	5,191	26	4,139	38	4,196	38	3,412
Non-Federal														
TOTAL OPERATING FUNDING SOURCES							6	5,191	26	4,139	38	4,196	38	3,412

Operating Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff														
Other Objects, ongoing														
Initial Automation(hard/software) 1/									2	240	4	255	4	255
Initial furnishings and equipment										50		500		200
Other objects, one-time														
Building management & maintenance											10	576	10	576
Move costs														
Special costs 2/						100	6	5,500	12	2,854	12	1,854	12	1,354
TOTAL PROGRAM COSTS						100	6	5,500	14	3,144	26	3,185	26	2,385
FACILITIES SERVICES														
Security									2	420	12	420	12	420
Physical Plant														
Design & Construction Support														
Operations & Maintenance														
Utilities & Communications														
Utilities & Postage						(300)		(309)		575		591		607
Communications														
TOTAL FACILITIES SVCS. COSTS						(300)		(309)	12	995	12	1,011	12	1,027
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS														
GRAND TOTAL OPERATING						(200)	6	5,191	26	4,139	38	4,196	38	3,412

Operating Cost Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE August 27, 1999

PROJECT NO.: **973316**
UNIT: **Arts and Industries Building (AIB)**
PROJECT NAME: **Master Plan Implementation**

CONSTRUCTION COST: $50 - 60 million construction budget
FUNDING SOURCES: Yearly Federal appropriation for design and construction

CONSTRUCTION START: Spring 2002
CONSTRUCTION COMPLETE: Spring 2005

DESCRIPTION: The building currently provides public exhibition space and office space for about twenty-three organizations. Most of the building systems are beyond their useful life. The project involves the renovation all major systems including mechanical, electrical, communication, fire safety, fire protection, accessibility for persons with disabilities and a service annex. The renovation will enhance the nineteenth century character of the building to meet the need of the new century. The mix of public and private space will be reprogrammed in an effort to restore the building to the original historical intent as a flexible facility for public programming.

CURRENT STATUS: The Architect –Engineer has been contracted to provide the pre-design services for the project. Most of these services have been completed which include field survey, programmatic analysis and concept submissions. Schematics are expected to begin shortly which will complete the pre-design phase. The next phase is Design Development and Construction Documents and a contract will be negotiated with the A-E.

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data			
Facility (Building)	ARTS & INDUSTRIES BUILDING		
Project Title	MAJOR CAPITAL RENEWAL		
Project Description & Purpose	MASTER PLAN IMPLEMENTATION		
Projected Gross Square Footage	168,900 existing SF		
Authorization Date (or Projected)	not needed		
Design Start/ Completion Dates	October 1998	to	April 2001
Construction Start/Completion Dates	April 2002	to	April 2005
Beneficial Occupancy Date	April 2005		
Full Occupancy Date	April 2005		

Responding Office	OPP
Date	9/1/99
Purpose	FY2001-FY2005 Planning Period

NOTES:

Construction Project Funding Sources $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 Dollars
FUNDING SOURCES							
Federal	2,368	3,500	2,000	9,620	11,000	17,500	16,700
Non-Federal							
TOTAL CONSTRUCTION FUNDING SOURCES							

Construction Project Costs $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 Dollars
Programming and Planning	2,368						
Design		2,500	2,000				
Site Preparation 1/							
Construction		2,000		9,120	10,500	17,000	16,000
Equipment and Furnishings							
Project & Construction Management							
Other 2/				500	500	500	700
TOTAL CONSTRUCTION COSTS	2,368	3,500	2,000	9,620	11,000	17,500	16,700

Construction Outlays $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 Dollars
Federal	2,368	3,500	2,000	10,000	11,000	17,000	17,000
Non-Federal							

1/ Includes landscaping, if required.

2/ Other diserete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE A&I Major Capital Renewal	DAT 09/01/99	Page 2
RESPONDING OFFICE			

Operating Funding Sources $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal														
Non-Federal														
TOTAL OPERATING FUNDING SOURCES		0		0		0		0		0		0		0

Operating Costs $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff														
Other Objects, ongoing														
Initial Automation(hard/software) 1/														
Initial furnishings and equipment														
Other objects, one-time														
Building management & maintenance														
Move costs														
Special costs 2/														
TOTAL PROGRAM COSTS		0		0	No change to operating costs anticipated							0		0
FACILITIES SERVICES														
Security														
Physical Plant														
Design & Construction Support														
Operations & Maintenance														
Utilities & Communications														
Utilities & Postage														
Communications														
TOTAL FACILITIES SVCS. COSTS		0		0	No change to operating costs anticipated							0		0
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS		0		0	No change to operating costs anticipated							0		0
GRAND TOTAL OPERATING		0		0		0		0		0		0		0

Operating Cost Outlays $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

Office of Physical Plant
Project Management Division

CURRENT CAPITAL PROJECT UPDATE

August 27, 1999

PROJECT NO.: **997002**
UNIT: **South Mall**
PROJECT NAME: **Central Chiller Plant**

CONSTRUCTION COST:	$35 million estimate
FUNDING SOURCES:	Expected third party financing through a utility company (via utility energy-efficiency service contract); annual contract cost of approximately $3.5 million to be partially offset by energy savings with balance paid from S&E funds appropriated for utilities.
CONSTRUCTION START:	Summer 2000
CONSTRUCTION COMPLETE:	December 2002

DESCRIPTION: The project involves the construction of a below ground central chiller plant to be located on the west side of the NASM site. It will provide chilled water for cooling to the Arts and Industries Building, the Smithsonian Institution Castle, the Quadrangle Building, the Freer Gallery of Art, the Hirshhorn Museum, the National Air and Space Museum and the National Museum of the American Indian. Most of the refrigeration equipment in these buildings has reached the end of their useful life and contains an ozone depleting CFC refrigerant that is no longer manufactured. The construction of a single central chiller plant will increase energy efficiency and allow existing mechanical equipment to be removed from many locations in each building, making additional space available for public and staff use. The consolidation of the mechanical equipment will effect more efficient use of maintenance resources as well.

The Smithsonian is currently exploring third-party financing through a utility company for construction of the chiller plant, as sanctioned by Executive Order 13123 "Greening the Government Through Efficient Energy management." The annual cost would be partially offset by energy savings over the existing plants, with the balance paid from funds appropriated for utilities.

CURRENT STATUS: Pre-design services, including site selection and concepts, have been completed. Schematics will be completed in mid-September 1999, and construction documents will be complete in Spring 2000. Discussions are underway with the government agencies that will review and approve the plant and the utility companies that may construct it.

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data			
Facility (Building)	South Mall		
Project Title	Central Chiller Plant		
Project Description & Purpose	Replace chiller plants in buildings on south side of Mall		
	with a new plant on the west side of NASM.		
Projected Gross Square Footage	TBD		
Authorization Date (or Projected)			
Design Start/ Completion Dates	August 1999	to	August 2000
Construction Start/Completion Dates	May 2000	to	December 2002
Beneficial Occupancy Date	December 2002 for initial buildings		
Full Occupancy Date	Full use by early 2004 (buildings on line incrementally)		

Responding Office	OPP
Date	9/1/99
Purpose	FY2001-FY2005 Planning Period

NOTES:

Assumes third party financing through a utility company (via utility energy-efficiency service contract) as sanctioned by EO 13123. Annual cost to be offset with energy savings over existing plants, with the balance paid from funds appropriated for utilities.

Construction Project Funding Sources $(000)s	PRIOR YR. Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
FUNDING SOURCES							
Federal	656	800					
Non-Federal SEE NOTES		35,000					
TOTAL CONSTRUCTION FUNDING SOURCES	656	35,800					

Construction Project Costs $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Programming and Planning	656						
Design		800					
Site Preparation 1/							
Construction (assumes final design included in service contract with utility)		35,000					
Equipment and Furnishings							
Project & Construction Management							
Other 2/							
TOTAL CONSTRUCTION COSTS	656	35,800					

Construction Outlays $(000)s	PRIOR YR. Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Federal	656	800					
Non-Federal		TBD					

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE South Mall - Chiller Plant	DAT 09/01/99 Page 2
RESPONDING OFFICE		

Operating Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal						1,495		3,500		2,960		2,347		2,347
Non-Federal														
TOTAL OPERATING FUNDING SOURCES														

Operating Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff														
Other Objects, ongoing														
Initial Automation(hard/software) 1/														
Initial furnishings and equipment														
Other objects, one-time														
Building management & maintenance														
Move costs														
Special costs 2/														
TOTAL PROGRAM COSTS														
FACILITIES SERVICES														
Security														
Physical Plant														
Design & Construction Support														
Operations & Maintenance NOTE: some operational savings are expected which would allow redirection of resources to maintenance of other SI facilities.														
Utilities & Communications														
Utilities & Postage										(540)		(1,153)		(1,153)
Contract Payments (cost and start date to be negotiated)						1,495		3,500		3,500		3,500		3,500
TOTAL FACILITIES SVCS. COSTS						1,495		3,500		2,960		2,347		2,347
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS														
GRAND TOTAL OPERATING						1,495		3,500		2,960		2,347		2,347

Operating Cost Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

Office of Physical Plant
Project Management Division

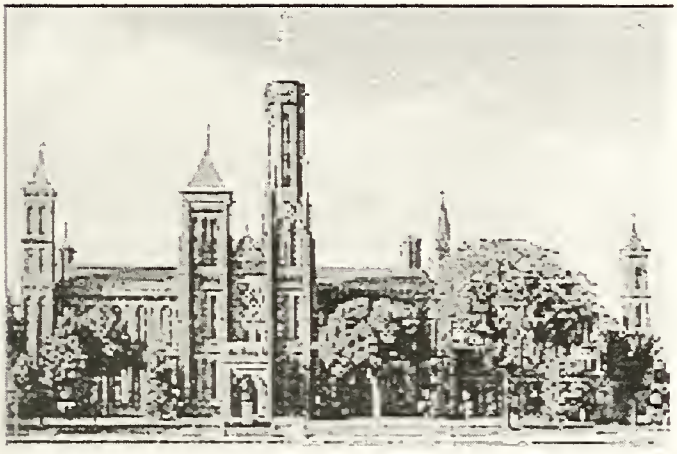
CURRENT CAPITAL PROJECT UPDATE August 27, 1999

PROJECT NO.: **963207**
UNIT: **Smithsonian Institution Building (SIB)**
PROJECT NAME: **Master Plan Implementation**

CONSTRUCTION COST: $35 – 50 million
FUNDING SOURCES: Yearly federal appropriation for design and construction
CONSTRUCTION START: Summer 2006
CONSTRUCTION COMPLETE: Summer 2009

DESCRIPTION: The building provides administrative offices, public space and food service. Most of the building systems are beyond their useful life. The project involves the renovation of all major systems including mechanical, electrical, communications, fire safety, fire protection, security and accessibility for persons with disabilities. The renovation will enhance the nineteenth century character of the building to meet the need of the new century.

CURRENT STATUS: The Architect – Engineer has been selected and is currently developing a fee proposal to provide pre-design services for the project which will include field survey, programmatic analysis and concept submission.



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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	SMITHSONIAN INSTITUTION BUILDING
Project Title	MAJOR CAPITAL RENEWAL
Project Description & Purpose	MASTER PLAN IMPLEMENTATION
Projected Gross Square Footage	104,000 existing SF
Authorization Date (or Projected)	not needed
Design Start/ Completion Dates	6/00 - 6/01 (Program/Concepts); 7/03 - 7/04 (Design)
Construction Start/Completion Dates	July 2006 to July 2009
Beneficial Occupancy Date	July 2009
Full Occupancy Date	July 2009

Responding Office	OPP
Date	9/1/99
Purpose	FY2001-FY2005 Planning Period

NOTES:

Construction Project Funding Sources $(000)s	PRIOR YR. Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
FUNDING SOURCES							
Federal	400	500			2,000	2,000	
Non-Federal							
TOTAL CONSTRUCTION FUNDING SOURCES							

Construction Project Costs $(000)s	PRIOR YR. Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Programming and Planning	400	500					
Design					2,000	2,000	
Site Preparation 1/							
Construction							
Equipment and Furnishings							
Project & Construction Management							
Other 2/							
TOTAL CONSTRUCTION COSTS	400	500			2,000	2,000	

Construction Outlays $(000)s	PRIOR YR. Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 + Dollars
Federal	400	500			1,500	2,000	500
Non-Federal							

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE	SIB Major Capital Renewal	DAT 09/01/99	Page 2
RESPONDING OFFICE				

Operating Funding Sources $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal														
Non-Federal														
TOTAL OPERATING FUNDING SOURCES		0		0		0		0		0		0		0

Operating Costs $(000)s	PRIOR YR		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff														
Other Objects, ongoing														
Initial Automation(hard/software) 1/														
Initial furnishings and equipment														
Other objects, one-time														
Building management & maintenance														
Move costs														
Special costs 2/														
TOTAL PROGRAM COSTS		0		0		No change to operating costs anticipated						0		0
FACILITIES SERVICES														
Security														
Physical Plant														
Design & Construction Support														
Operations & Maintenance														
Utilities & Communications														
Utilities & Postage														
Communications														
TOTAL FACILITIES SVCS. COSTS		0		0		No change to operating costs anticipated						0		0
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS		0		0		No change to operating costs anticipated						0		0
GRAND TOTAL OPERATING		0		0		0		0		0		0		0

Operating Cost Outlays $(000)s	PRIOR YR		FY 2000		FY 2002		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

National Zoological Park
Office of Facilities Management and Construction

CURRENT CAPITAL PROJECT UPDATE August 1999

PROJECT NO.: Multiple
UNIT: **National Zoological Park**
PROJECT NAME: **Major Capital Renewal Program**

CONSTRUCTION COST:	$13.8 million requested over six years $4.7 million other project costs (design, exhibit, etc.) requested over six years
FUNDING SOURCES:	$18.5 million Federal appropriation for planning, design and construction
CONSTRUCTION START:	October 2000 – Consolidated Maintenance Facility October 2000 – Mane Building Renovation October 2001 – Road and Bridge Repairs October 2002 – Bear Habitat Renovation (upper)
CONSTRUCTION COMPLETE:	October 2002 – Consolidated maintenance Facility April 2001 – Mane Building Renovation April 2002 – Road and Bridge Repairs April 2006 – Bear Habitat Renovation (upper)

DESCRIPTION: The Consolidated Maintenance Facility Project at Front Royal, Virginia replaces several badly deteriorated maintenance buildings with a single consolidated facility. Some of the existing buildings are in such bad condition that they are no longer safe for use.

A number of buildings at Rock Creek are currently below the acceptable performance level. As major components of the building systems age, the risk of operational failure, unscheduled closings, and danger to the animal collections and research efforts increases dramatically. Renovation of the Mane Building includes structural repairs and replacement of all major building systems, along with historic preservation and restoration of the original structure. The Australia Building renovation includes replacement of all major systems and structural repairs. The Bear Exhibit renovation includes improving animal containment and replacing all major systems and structures.

Roads and bridges are deteriorating due to heavy use. The Blue Road was replaced in 1998. Work on the North Road and bridge repairs to prevent deterioration will include replacing paving, stabilizing failed areas of pavement and reinforcing bridge structures.

CURRENT STATUS: Drawings and specifications are ready to bid for the Consolidated Maintenance Facility at Front Royal, Virginia. Concept design for the Mane Building is complete and award is being made for preparation of construction documents. Testing is on-going to determine the extent of structural repairs that will be required for the Australia Building. In house project planning is underway for Road and Bridge Repairs and for Bear Habitat Renovations.

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Capital Budget Schedule and Operating Cost Projections

Schedules and Other Data	
Facility (Building)	National Zoological Park & Conservation Research Center
Project Title	NZP Major Capital Renewal
Project Description & Purpose	Renovation of buildings and site infrastructure at NZP Rock
	Creek and Front Royal properties to correct deficiencies
Projected Gross Square Footage	1,000,000 existing SF
Authorization Date (or Projected)	not needed
Design Start/ Completion Dates	1998, continuing (multiple projects)
Construction Start/Completion Dates	Fall 2001, continuing (multiple projects)
Beneficial Occupancy Date	continuous
Full Occupancy Date	

Responding Office	NZP
Date	9/1/99
Purpose	FY2001-FY2005 Planning Period

NOTES

Construction Project Funding Sources $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 Dollars
FUNDING SOURCES							
Federal		900	4,625	4,200	2,800	2,950	2,950
Non-Federal							
TOTAL CONSTRUCTION FUNDING SOURCES		900	4,625	4,200	2,800	2,950	2,950

Construction Project Costs $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 Dollars
Programming and Planning							
Design		900	1,825	2,000			
Site Preparation 1/							
Construction			2,800	2,200	2,800	2,950	2,950
Equipment and Furnishings							
Project & Construction Management							
Other 2/							
TOTAL CONSTRUCTION COSTS		900	4,625	4,200	2,800	2,950	2,950

Construction Outlays $(000)s	PRIOR YR Dollars	FY 2000 Dollars	FY 2001 Dollars	FY 2002 Dollars	FY 2003 Dollars	FY 2004 Dollars	FY 2005 Dollars
Federal		900	4,500	4,300	2,700	3,000	3,000
Non-Federal							

1/ Includes landscaping, if required.

2/ Other discrete project expenses not included in the design or construction contract, i.e. relocation and security requirements, such as reimbursement to OPS for overtime.

NA - not applicable.
TBD-to be determined.

Capital Budget: Operating Cost Projection	PROJECT TITLE NZP Major Capital Renewal	DAT 09/01/99 Page 2
RESPONDING OFFICE		

Operating Funding Sources $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
FUNDING SOURCES														
Federal														
Non-Federal														
TOTAL OPERATING FUNDING SOURCES		0		0		0		0		0		0		0

Operating Costs $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005	
	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars
PROGRAM COSTS														
Staff														
Other Objects, ongoing														
Initial Automation(hard/software) 1/														
Initial furnishings and equipment														
Other objects, one-time														
Building management & maintenance														
Move costs														
Special costs 2/														
TOTAL PROGRAM COSTS		0		0		No change to operating costs anticipated						0		0
FACILITIES SERVICES														
Security														
Physical Plant														
Design & Construction Support														
Operations & Maintenance														
Utilities & Communications														
Utilities & Postage														
Communications														
TOTAL FACILITIES SVCS. COSTS		0		0		No change to operating costs anticipated						0		0
SI/CENTRAL OVERHEAD (SUPPORT)														
SI Libraries														
Environmental Management & Safety 3/														
Central Administration Costs														
TOTAL SI COSTS		0		0		No change to operating costs anticipated						0		0
GRAND TOTAL OPERATING		0		0		0		0		0		0		0

Operating Cost Outlays $(000)s	PRIOR YR.		FY 2000		FY 2001		FY 2002		FY 2003		FY 2004		FY 2005 +	
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars
Federal														
Non-Federal														

1/ Include installation and communication requirements.

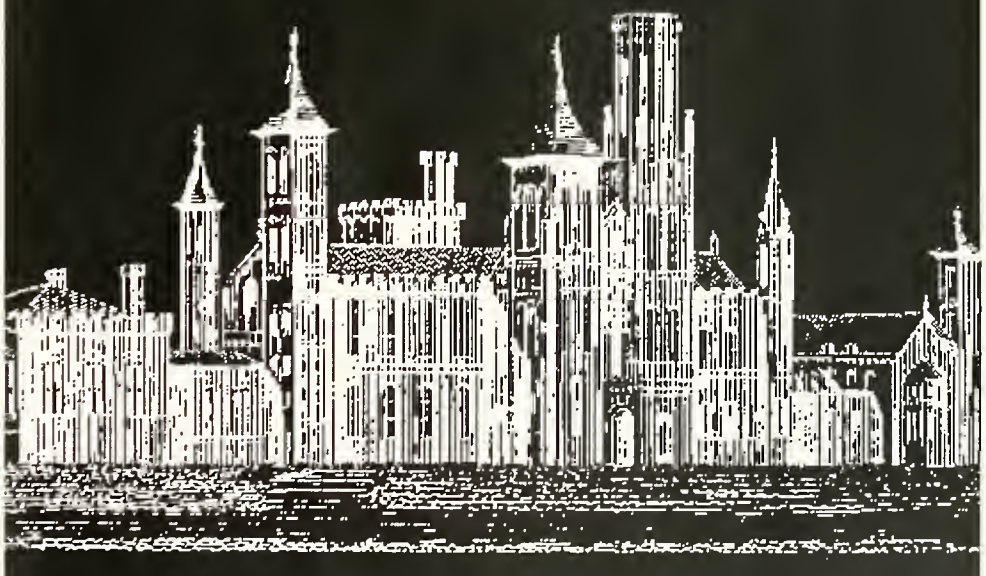
2/ Include exhibit installation costs here.

3/ Include Health Services costs here.

Smithsonian Institution

Facilities Repair, Restoration, & Alteration Program

Supplement to the FY 2001 Budget Request to OMB



September 1999

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E Pluribus Unum: This Divine Paradox, Report of the Commission on the Future of the Smithsonian Institution, May 1995, Washington, DC.

Executive Summary

Repair, Restoration and Alteration of Buildings

The Institution is steward of the valuable and visible buildings entrusted to it by the Nation. These facilities form a vital infrastructure for accomplishment of many programs and activities, provide safe haven to irreplaceable collections in our care, and allow public access to the collections and programs by millions of visitors and scholars. Many of the buildings are themselves important icons of the Nation's cultural heritage, part of the Nation's "face" to the world, and must be preserved with the intent of occupying them indefinitely. Funding for repair and renewal of the Institution's facilities has not kept pace with the need and this has resulted in accelerating deterioration of the Smithsonian's physical plant. In May 1995, the Commission on the Future of the Smithsonian Institution expressed concern about the magnitude and continuing growth of the deferred maintenance problem, and recommended an immediate investment in renovation and restoration of the Institution's facilities. "Otherwise, the Smithsonian will no longer convey to our citizens, or to the world, the image of a nation rich in cultural experience, in natural resources, and in its vision for the future."[1]

Assessment of Facility Conditions

Building systems and components have limited life expectancies. Despite planned preventive maintenance and repair efforts, their heavy and constant use has exacerbated the natural aging process of components. As building systems age, the risk of operational failure, unscheduled closings, and damage to collections increases dramatically. In addition, aging systems require increasingly frequent maintenance and repair, which drives up costs. Eventually, systems reach the "breakdown" mode of operation. Once a system has reached this stage, it can no longer reliably support activities housed in the building. In the case of museum mechanical systems (heating, ventilation and air conditioning) or roofs, this usually means that the continuous close control of environmental conditions and protection from the elements required to preserve collections cannot be guaranteed. In addition, it costs as much as five times more to achieve this minimally acceptable performance through "breakdown" maintenance – that is, repairing or replacing system

[1] *E Pluribus Unum: This Divine Paradox,* Report of the Commission on the Future of the Smithsonian Institution, May 1995, Washington, DC.

components on an emergency basis when they fail. Resources spent to patch existing systems are essentially wasted when the systems later require full replacement. More importantly, with high public visability and about 30 million annual visits, the potential for irreparable damage to the collections and unplanned system failures carries major implications for the Institution. When a system has deteriorated to the breakdown point, major renewal or replacement is the only way to regain acceptable performance.

The Institution has carefully inspected its facilities and analyzed the current condition of its buildings. Parameters used to assess existing conditions are watertight enclosure, age and condition of heating, ventilating and air conditioning (HVAC) and electrical systems, and compliance with current codes and industry operating standards. With this information, the staff determines the remaining service life of building systems and components and estimates repair or replacement requirements to keep each building operating at an acceptable performance level.

Two of the Smithsonian's major buildings, the National Museum of Natural History and the Patent Office Building, have already reached the "breakdown" stage. Two more buildings, the Arts and Industries Building and the Smithsonian Institution "Castle" Building, and many buildings at the National Zoological Park Rock Creek and Front Royal sites, are rapidly approaching this stage. Together, these four buildings and the National Zoological Park properties represent over one-third of the Institution's usable area and contain significant amounts of public space.

SMITHSONIAN INSTITUTION

Repair, Restoration and Alteration of Facilities

DETAIL OF
FY 2001 - FY 2005 FIVE-YEAR PROGRAM

OMB Request

Prepared by the
PROJECT MANAGEMENT DIVISION
OFFICE OF PHYSICAL PLANT
September 1, 1999

Repair, Restoration and Alteration of Facilities
FY 2001 - FY 2005 FIVE-YEAR PROGRAM

OMB Request

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Definitions

Repair, Restoration and Alteration of Facilities Program

Major Capital Renewal

Provides funds for the cyclical replacement of major building systems and equipment and major renovation projects required for the preservation of the buildings. Primarily addresses the major replacement requirements for HVAC and electrical systems at the older buildings where systems are nearing the end of their service lives.

Code Compliance and Security

Fire Detection and Suppression Projects

Provides fire protection and safety measures meeting today's standards with state-of-the-art technology. Typically includes installation of detection systems such as smoke alarms, suppression systems such as sprinklers, and architectural modifications to create fire zones by installing fire walls and doors

Access, Safety, and Security Projects

Provides better access to facilities for persons with disabilities, improves environmental conditions for the health and safety of visitors and staff, and corrects facility conditions that threaten the security of the National Collections.

Infrastructure Repair

General Repairs

Provides resources for minor, unscheduled, but essential repairs that the Institution cannot anticipate specially or that do not fit into any one discrete category.

Facade, Roof, and Terrace Repairs

Provides exterior repair and maintenance to building envelopes to prevent major structural and interior damage and deterioration due to age, water intrusion, and weathering.

Utility System Repairs

Maintains, repairs, and upgrades the heating, ventilating, and air conditioning (HVAC) systems and plumbing, electrical, and communications systems. Ensures reliable and energy-efficient operation of utility systems through ongoing renovation, repairs, and replacement of deteriorated equipment.

R&R Planning, Design and Inspection

Supports projects to identify and analyze long-range repair and restoration needs and to design future-year projects in advance of funding requests.

Alterations and Modifications

Provides for smaller, program-oriented construction projects with estimated construction cost less than $1 million.

Explanation of Ranking Codes

R&R Ranking Code System

A Must not defer:

A1 Building Shell Failure, includes
- Active roof leak
- Active wall leak

A2 HVAC, Electrical, Security System Failure, includes
- Active piping leak
- Active or frequent system/equipment failures

A3 Mandated/Unexpected Compliance

B Should not defer (High Priority):

B1 Building Shell Maintenance, includes
- Imminent failure of exterior shell
- Imminent failure of exterior HVAC, electrical, security equipment
- On-going site utility maintenance problem

B2 Building System Maintenance, includes
- Imminent failure of building systems

B3 High priority code improvements includes
- fire and life safety, accessibility, HVAC, electrical, security equipment

C Should not defer (Medium Priority):

C1 Predicted, required repair or maintenance

C2 On-going or phased construction efforts, includes
- Separate but part of on-going construction
- Needed for start of higher priority project
- Needed to properly complete high priority project

C3 Cost-effective payback period, includes
- Energy or maintenance savings payback within 7 years

D Can defer one year or logically phase

E Can defer more than one year

F Should reconsider

A&M Ranking Code System

A Cannot defer:

Critical to success of high priority Institutional program initiative; program cannot be implemented without this project.

B Should not defer:

B1 Part of backlog of A&M requirements to improve operating efficiency.

B2 Part of an ongoing or phased effort, coordinated with other projects, or with significant program considerations.

C Could defer:

Defer construction, design funding should remain in projected year, or construction could be logically phased (suggest minimum funding increment).

D Can defer comfortably for one year

E Can defer more than one year

F Should reconsider

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

Program Summary

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
MAJOR CAPITAL RENEWAL	24,205	34,280	37,695	42,320	31,705	33,475
CODE COMPLIANCE AND SECURITY						
Fire Detection and Suppression	775	725	735	1,160	985	2,260
Access, Safety and Security	4,000	5,608	4,765	2,515	5,965	5,660
INFRASTRUCTURE REPAIR						
General Repair	6,837	7,367	8,655	6,805	8,885	7,750
Facade, Roof and Terrace Repair	1,938	3,640	1,510	955	5,430	3,875
Utility System Repair	5,145	6,380	4,640	4,245	5,030	4,980
R&R Planning, Design and Inspection	2,000	2,000	2,000	2,000	2,000	2,000
SUB-TOTAL FOR R&R PROGRAM	**44,900**	**60,000**	**60,000**	**60,000**	**60,000**	**60,000**
ALTERATIONS & MODIFICATIONS	3,000	4,000	5,000	6,000	6,000	6,000
GRAND TOTAL		**64,000**	**65,000**	**66,000**	**66,000**	**66,000**

Note: All figures in 000s.

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

ANACOSTIA MUSEUM - 46

OPP Proj. Mgr: Frank Gilmore 202 287-2133
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repairs	0	60 B	60 B	60 B	60 B	60 B
Paving & Sidewalk	0	0	0	0	0	150 C1
2. FACADE, ROOF & TERRACE REPAIR						
Facade and Roof Repair & Painting	0	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Interior/Exterior Access	0	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
Elect./Mech. Study & Modifications (954604)	0	0	0	0	0	0
HVAC Upgrade	0	0	0	0	0	0
Restroom Upgrades	0	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	0	60	60	60	60	210

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	0	60	60	60	60	210

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (46 - AM)	0	60	60	60	60	210

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

ARTS & INDUSTRIES BUILDING - 33

OPP Proj. Mgr: Aris T. Allen 202 287-2043
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
No Projects Identified	0	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
No Projects Identified	0	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
No Projects Identified	0	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
No Projects Identified	0	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. HVAC & ELEC. IMPROVEMENTS - Master Plan Implementation						
Roof Renovation	2,000 A	0	0	0	0	0
Master Plan	0	0	9,620 B2	11,000 B2	17,500 B2	16,700 B2
Design Costs	2,500 B2	2,000 B2	0	0	0	0
	4,500	2,000	9,620	11,000	17,500	16,700

	FY'00	**FY'01**	**FY'02**	**FY'03**	**FY'04**	**FY05**
TOTAL FOR R&R PROGRAM	**4,500**	**2,000**	**9,620**	**11,000**	**17,500**	**16,700**

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	**FY'01**	**FY'02**	**FY'03**	**FY'04**	**FY05**
FACILITY TOTAL (33 - AIB)	**4,500**	**2,000**	**9,620**	**11,000**	**17,500**	**16,700**

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

COOPER-HEWITT MUSEUM - 58

OPP Proj. Mgr: Frank Gilmore 202 287-2133
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repairs	50 B	60 B	60 B	60 B	60 B	60 B
Mansion Interior Restoration (975802)	0	325 B3	350 B3	0	350 B3	0
2. FACADE, ROOF & TERRACE REPAIR						
Mansion Facade & Fence Repair	0	1,300 B3	0	0	0	0
Fox House Exterior Repair	0	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
No Projects Identified	0	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
No Projects Identified	0	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	50	1,685	410	60	410	60

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	50	1,685	410	60	410	60

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Garden Landscaping	0	0	0	0	0	550 C
	0	0	0	0	0	550

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (58 - CHM)	50	1,685	410	60	410	610

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

FREER GALLERY OF ART - 37

OPP Proj. Mgr: Judson McIntire 202-3357
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repairs	20 B	20 B	20 B	20 B	20 B	20 B
2. FACADE, ROOF & TERRACE REPAIR						
Courtyard Window & Door Condensation	0	0	0	0	0	0
Skylight Repair (973701)	0	150 B2	0	0	0	0
Entry Sidewalk Repair	0	0	0	0	0	500 C1
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Courtyard Lift & Handrails (973703A)	0	0	60 B3	0	0	0
5. UTILITY SYSTEM REPAIR						
Gallery Lighting Systems Replacement	0	0	0	0	350 C1	0
Roof/Storm Sewer Repair (993702)	25 B1	0	0	0	0	100 B1
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	45	170	60	20	370	620

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	45	170	60	20	370	620

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (37 - FGA)	45	170	60	20	370	620

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

HIRSHHORN MUSEUM & SCULPTURE GARDEN - 45

OPP Proj. Mgr: Frank Gilmore 202 287-2133
FAX 202-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
No Projects Identified	0	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
Window Replacement	0	0	0	0	0	0
Building Facade/Garden	0	0	0	0	4,500 C1	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Front Entrance	0	0	0	0	850 B3	0
5. UTILITY SYSTEM REPAIR						
Interior Lighting Improvement	0	0	1,000 B	0	0	0
Mall Master Raceway Improvements	0	0	0	0	0	0
HVAC System	0	1,800 A2	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	0	1,800	1,000	0	5,350	0

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	0	1,800	1,000	0	5,350	0

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Collection Storage Improvements	0	0	500 B	500 B	500 B	0
	0	0	500	500	500	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (45 - HMSG)	0	1,800	1,500	500	5,850	0

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

MUSEUM SUPPORT CENTER - 71

OPP Proj. Mgr: Les Heacock 202-287-2145
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Painting (957105)	0	0	0	175 C2	0	0
Service Road Repair & Striping	0	0	0	100 C2	0	500 C2
2. FACADE, ROOF & TERRACE REPAIR						
Clean & Recaulk Facade (997101)	0	0	400 C1	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Security System Upgrade	0	0	900 B3	0	0	0
5. UTILITY SYSTEM REPAIR						
Isolation Valves /Humidifier Replacement	0	0	100 B2	0	0	0
Boiler Tube Replacement	80 A2	0	0	0	0	0
Replace Transfer Switches	0	75 A2	0	0	0	0
Emergency Generator	0	0	0	0	250 C1	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	80	75	1,400	275	250	500

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	80	75	1,400	275	250	500

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Parking Lot Expansion	0	0	0	0	0	160 B1
	0	0	0	0	0	160

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (71 - MSC)	80	75	1,400	275	250	660

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

NATIONAL AIR & SPACE MUSEUM - 35

OPP Proj. Mgr: Les Heacock 202 287-2145
Window Wall Proj. Mgr: Jack Moyer 202-287-3376
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repairs	75 B	75 B	75 B	75 B	75 B	75 B
Paint Loading Dock	0	0	0	0	250 C1	0
Replace Ceiling in Langley & Projection Booth	0	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
Skylight & Window Wall (923504)	750 A1	750 A1	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
Upgrade Restaurant Alarms	0	0	0	0	125 B2	0
Fire Alarm Repair	0	0	0	0	100 B3	0
4. ACCESS, SAFETY & SECURITY						
Accessible Egress Upgrade	0	0	0	0	250 B3	0
Additional Electronic Surveillance	0	0	0	0	0	250 D
Exhibit Alarming/CCTV	0	0	0	0	900 B2	0
Remove Plywood Flooring (983501)	0	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
Replace Dimmers in Theater	0	0	75 C1	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	825	825	75	75	1,700	325

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Master Plan	0	0	0	0	500 B2	0
	0	0	0	0	500	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	825	825	75	75	2,200	325

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (35 - NASM)	825	825	75	75	2,200	325

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

NMAI, GEORGE GUSTAV HEYE CENTER - 24

OPP Proj. Mgr: Vacant, call S. Kołasinski 202-287-3135
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
No Projects Identified	0	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
No Projects Identified	0	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Women's Locker Room (982103)	80 C2	0	0	0	0	0
Gallery Lighting Mods (982103)	0	20 B3	0	0	0	0
Security Improvements (982103)	0	35 C2	0	0	0	0
Photo Studio Partition	0	50 C2	0	0	0	0
5. UTILITY SYSTEM REPAIR						
UCS Cable	150 B1	0	0	0	0	0
Acoustical Repair	25 B2	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	255	105	0	0	0	0

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	255	105	0	0	0	0

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Heye Center Pavilion Renderings & Signage	0	60 B2	0	0	0	0
	0	60	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (GGHC)	255	165	0	0	0	0

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

NATIONAL MUSEUM OF THE AMERICAN INDIAN - 21, 22 and 23

(includes Research Branch & Cultural Resource Center)

OPP Proj. Mgr: Vacant, call S. Kolasinski 202-287-3135
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Research Branch General Repairs	50 B	60 B	60 B	60 B	60 B	60 B
CRC General Repairs	10 B	10 B	10 B	10 B	10 B	10 B
2. FACADE, ROOF & TERRACE REPAIR						
No Projects Identified	0	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
CRC Fire Trail Stabilization	0	80 B3	0	0	0	0
5. UTILITY SYSTEM REPAIR						
Replace Liebert Units & Controls	70 B2	0	0	0	0	0
Mall Master Raceway (922307B)	125 C2	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	255	150	70	70	70	70

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	255	150	70	70	70	70

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (21 - NMAI)	255	150	70	70	70	70

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

NATIONAL MUSEUM OF AMERICAN HISTORY - 30

OPP Proj. Mgr: Judson McIntire 202-287-3357
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Landscape & Exterior Rehab	0	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
Roof Replacement (923003)	125 A1	0	0	0	0	0
Repair Ice Melt Equipment (943009)	0	0	0	0	0	900 B2
3. FIRE DETECTION & SUPPRESSION						
Fire Protection Master Plan (993006)	0	0	0	0	0	1,500 B3
4. ACCESS, SAFETY & SECURITY						
Railroad Hall Access (943008)	0	0	300 B3	0	0	0
Restroom Access & Repair (993010)	0	0	250 B3	0	0	600 B3
Exterior Doors & Handrails (923006)	800 A1	0	0	0	0	0
Security System Repair	0	0	0	0	0	900 B3
Exhibit Alarming/Card Access/CCTV	0	0	0	0	1,000 B3	0
Fullerton Security & Fire Protection (993002)	0	200 B3	0	0	0	0
Fountain Restoration (983016)	50 B1	0	0	0	0	0
Loading Dock Exhaust (993014)	50 A2	0	0	0	0	0
Fifth Floor Terrace Access (973003A)	0	0	0	0	0	150 B3
5. UTILITY SYSTEM REPAIR						
Backup Power Connection for Computer System	0	0	0	0	0	125 B2
Refurbish Cooling Tower (993008)	0	450 A2	0	0	0	0
HVAC Repair (993009 & 993013)	450 A2	0	0	0	0	0
Steam Distribution System Replacement (953019)	0	1,300 A2	0	0	0	0
High Voltage Vault Cooling (953019)	0	0	0	0	0	200 B3
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	1,475	1,950	550	0	1,000	4,375

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	1,475	1,950	550	0	1,000	4,375

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Music Hall&Office HVAC/Acoustic Improvements	300 B2	0	0	0	0	0
Exhibit Hall Renovation	0	300 B1	350 B1	400 B1	400 B1	350 B1
Catering Kitchen	0	0	170 B1	0	0	0
	300	300	520	400	400	350

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (30 - NMAH)	1,775	2,250	1,070	400	1,400	4,725

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

NATIONAL MUSEUM OF NATURAL HISTORY - 31

OPP Proj. Mgr: Alison Hunt 202-287-2149
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repair (983103)	0	50 B	50 B	50 B	50 B	50 B
2. FACADE, ROOF & TERRACE REPAIR						
West Loading Dock Doors (993120)	0	60 B2	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
Incorporated into MCR	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Elevators 19 & 20 (953131)	345 B2	0	0	0	0	0
West Loading Dock Lift	0	0	0	0	200 B2	0
Rotunda Mall Accessible Entrance (993119)	0	800 B3	0	0	0	0
Chemical Control Facility	0	0	0	0	0	995 A3
Exhibit Shop Exhaust Upgrade(993110)	0	150 B3	0	0	0	0
5. UTILITY SYSTEM REPAIR						
Incorporated into MCR	0	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
Rotunda Mall Accessible Entrance (993119)	100 B3	0	0	0	0	0
	445	1,060	50	50	250	1,045

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. MASTER IMPLEMENTATION PLAN						
Master Plan Improvements & Interim Repairs	9,405 A2	9,355 A2	6,625 A2	6,520 A2	8,755 A2	10,825 A2
Mall Master Raceway (923118)	200 C2	300 C2	0	0	0	0
Design Costs, Master Plan & Interim Repairs	700 A2	1,000 A2	0	2,000 A2	0	3,000 A2
	10,305	10,655	6,625	8,520	8,755	13,825

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	10,750	11,715	6,675	8,570	9,005	14,870

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Exhibit Hall Demolition	0	800 A	500 A	0	0	0
Space Modifications/Improvements	700 A	0	225 C	700 C	700 C	700 C
	700	800	725	700	700	700

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (31 - NMNH)	11,450	12,515	7,400	9,270	9,705	15,570

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

NATIONAL ZOO, Rock Creek (67 - NZP)

Facility Manager Robin Vasa 202 673-0214
FAX 202 673-4923

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Road Repairs & Erosion Control	60 B1	60 B1	60 B1	60 B1	60 B1	60 B1
Graphics, Exhibits & Glass Repair	210 B1	210 B1	210 B1	210 B1	210 B1	210 B1
Tree, Turf & Soil	145 B1	145 B1	145 B1	145 B1	145 B1	145 B1
Bio-Programs WO Exhibit Repair	40 A3	40 A3	40 A3	40 A3	40 A3	40 A3
Misc. General Repair & Painting	270 B1	270 B1	270 B1	270 B1	270 B1	270 B1
2. FACADE, ROOF & TERRACE REPAIR						
Multiple Roof Repair (inc. B. V. Keeper Bldg in 01)	50 A1	80 A1	50 A1	50 A1	50 A1	50 A1
Holt House Stabilization	50 A1	0	0	0	0	0
Upper Bear Roof Stabilization	75 A1	300 A1	0	0	0	0
GSPB Structural Repairs	50 A1	0	200 B1	0	0	0
Lion/Tiger Moat & Planter Waterproofing	0	0	0	150 A1	200 A1	900 A1
Small Mammal Skylight Reglazing	0	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
Fire Alarms & Sprinklers	90 A3	90 A3	100 A3	100 A3	90 A3	90 A3
Fire Protection Improvements	50 A3	350 A3	350 A3	350 A3	350 A3	350 A3
4. ACCESS, SAFETY & SECURITY						
Accessibility Improvements	100 A3	200 A3	100 A3	100 A3	100 A3	100 A3
Renovate Auditorium & Seating for ADA	0	140 A3	0	0	0	0
Asbestos Abatement	50 B3	50 B3	50 B3	50 B3	50 B3	50 B3
Door, Cage, Glass & Fence Repair & Replacement	140 A2	340 A2	475 A2	340 A2	340 A2	340 A2
Amazonia: Replace Railings	50 B2	50 B2	200 B2	0	0	0
Bird House Bulk Food Storage/Dead End Corridor	30 B3	50 B3	0	0	0	0
Safety Improvements	20 A3	20 A3	20 A3	20 A3	20 A3	20 A3
Security System Improvements	85 B3	85 B3	85 B3	85 B3	85 B3	85 B3
5. UTILITY SYSTEM REPAIR						
Amazonia Filter	10 A2	10 A2	10 A2	10 A2	15 A2	15 A2
Fiber Optic/Comm. Infrastructure	25 B1	25 B1	25 B1	20 B1	25 B1	25 B1
Generator Upgrades & Elec. Improvements	20 A2	20 A2	20 A2	20 A2	20 A2	20 A2
HVAC Repair and Improvements	680 A2	680 A2	910 A2	910 A2	910 A2	910 A2
Irrigation & Sewer System Maintenance	50 B1	50 B1	55 B1	55 B1	55 B1	55 B1
Relamping	10 A2	10 A2	10 A2	10 A2	10 A2	10 A2
Zoo Wide Pool Repairs	300 B1	100 B1	100 B1	100 B1	100 B1	100 B1
Small Mammals HVAC Improvements	100 B1	0	0	500 B1	0	0
Utility Infrastructure Improvements	700 B1	700 B1	1,000 B1	1,600 B1	1,600 B1	1,600 B1
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	3,460	4,075	4,485	5,195	4,745	5,445

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Road and Bridge Repairs	110 B1	200 B1	1,000 B1	1,000 B1	350 B1	350 B1
Mane Building Renovation	400 A1	1,700 A1	0	0	0	0
Bear Habitat Renovation (upper)	300 A1	1,000 A1	1,000 A1	1,500 A1	2,600 A1	2,600 A1
Deer & Tapir Buildings	0	100 A1	0	0	0	0
Australia Building Structural Repair	90 A1	175 A1	0	0	0	0
Elephant House Renovation	0	350 B1	1,000 B1	0	0	0
	900	3,525	3,000	2,500	2,950	2,950
	FY'00	**FY'01**	**FY'02**	**FY'03**	**FY'04**	**FY05**
TOTAL FOR R&R PROGRAM	4,360	7,600	7,485	7,695	7,695	8,395

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Staff Office Improvements	0	100 B1	100 B1	100 B1	100 B1	100 B1
Exhibit Space Renovations	0	250 A	250 A	250 A	250 A	250 A
	0	350	350	350	350	350

	FY'00	**FY'01**	**FY'02**	**FY'03**	**FY'04**	**FY05**
FACILITY TOTAL (67 NZP)	4,360	7,950	7,835	8,045	8,045	8,745

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

NATIONAL ZOO, Front Royal (68 - NZPFR)

Facility Manager Robin Vasa 202 673-0214
FAX 202 673-4923

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Painting	10 B1	10 B1	10 B1	50 B1	50 B1	50 B1
Repair Shops	0	300 A2	300 A2	300 A2	300 A2	300 A2
Road Repair & Signage	7 B1	7 B1	10 B1	15 B1	15 B1	15 B1
Tree & Turf	30 B1	30 B1	30 B1	40 B1	40 B1	40 B1
Work Order Support	115 A2	125 A2	125 A2	125 A2	125 A2	125 A2
Replace Locks	0	50 B3	0	0	0	0
Admin Annex	0	0	0	160 B1	400 B1	0
Renovate Building 64 - Horse Barn	0	0	0	60 A1	400 A1	0
Emergency Repairs	175 A2	175 A2	175 A2	175 A2	175 A2	175 A2
Renovate Building 142 - Stallion Barn Storage	0	0	0	0	0	110 A1
Historic Site Assessment	0	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
Roof Repair	25 A1	25 A1	25 A1	50 A1	50 A1	50 A1
Window Replacement Program	25 B1	25 B1	25 B1	85 B1	85 B1	85 B1
Roof: Mule stable, Sm. An. Rivinus Barn, Res. 50	0	150 A1	150 A1	0	0	0
Roof: Slate Hill & Waller Barns	0	0	0	100 A1	50 A1	50 A1
Structural Repairs @ Hospital	43 A1	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
Fire Alarms & Sprinklers	35 A3	35 A3	35 A3	60 A3	70 A3	70 A3
Fire Protection Improvements	0	250 B3	250 B3	100 B3	250 B3	250 B3
Front Royal Dorm & Conf. Ctr. Sprinklers	50 A3	0	0	150	0	0
Maintenance Facilities Code Improvements	550 A3	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Accessibility Improvements	10 A3	10 A3	10 A3	150 A3	150 A3	150 A3
Asbestos & Lead Abatement	25 B3	25 B3	25 B3	50 B3	50 B3	50 B3
Fence, Gate, Railing & Glass Repair	15 A2	18 A2	20 A2	20 A2	20 A2	20 A2
5. UTILITY SYSTEM REPAIR						
Communications	15 B2	15 B2	15 B2	15 B2	15 B2	15 B2
Boilers - Annual Replacement	10 A2	10 A2	10 A2	10 A2	10 A2	10 A2
Electrical Improvements	30 A2	30 A2	30 A2	30 A2	30 A2	30 A2
High Voltage Testing	10 C1	0	10 C1	0	10 C1	0
Renovate Main Water Reservoir	0	0	50 B2	250 B2	0	0
Sewer/Storm Drain	10 B1	10 B1	10 B1	10 B1	10 B1	10 B1
Utility Upgrades	450 B1	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	1,640	1,300	1,315	2,005	2,305	1,605

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Consolidated Maintenance Facility	0	1,100 A1	1,200 A1	300 A1	0	0
	0	1,100	1,200	300	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	1,640	2,400	2,515	2,305	2,305	1,605

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (68 NZPFR)	1,640	2,400	2,515	2,305	2,305	1,605

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

PATENT OFFICE BUILDING (AM. ART/PORTRAIT GALLERY/ARCHIVES OF AM. ART -34 AAPG)

OPP Proj. Mgr: William Thomas 202 287-2159
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
No Projects Identified	0	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
No Projects Identified	0	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
No Projects Identified	0	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
No Projects Identified	0	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Physical Plant Renewal	8,000 A1	17,000 A1	17,000 A1	18,000 A1	0	0
	8,000	17,000	17,000	18,000	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	8,000	17,000	17,000	18,000	0	0

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (34 - AAPG)	8,000	17,000	17,000	18,000	0	0

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

QUADRANGLE - 63

Arthur M. Sackler Gallery
National Museum of African Art
Ripley Center

OPP Proj. Mgr: Judson McIntire 202-287-3357
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Misc. General Repair	50 B	50 B	50 B	50 B	50 B	50 B
Ripley Water Damage Repair (996302)	75 A1	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
African Art 3rd Level Leak Repair (986306)	0	250 B1	0	0	0	0
Roof Replacement (976309)	0	0	0	0	0	500 C1
Haupt/Sackler Fountain Repair	0	0	0	0	0	300 C1
Ripley Loading Dock Repair (976309B)	300 A1	0	0	0	0	0
Loading Dock Door & Gate (986307)	0	0	350 B3	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Life Safety/Interior Door Security (866370)	0	0	600 B3	0	0	0
Card Access/Intrusion Detection	0	0	0	0	0	0
Gallery Emergency Lighting & Exiting (996303)	50 A2	0	0	0	0	0
NMAA Courtyard Access (926317)	0	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
Steam Humidification Replacement	0	0	0	0	0	500 A2
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	475	300	1,000	50	50	1,350

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	**475**	**300**	**1,000**	**50**	**50**	**1,350**

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
SITES Space Modifications (986315)	150 A	0	0	0	0	0
AMSG Scholars' Offices	0	125 A	0	0	0	0
NMAFA Coat Room Modifications	0	0	0	0	100 C	0
	150	125	0	0	100	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (63 - QUAD)	**625**	**425**	**1,000**	**50**	**150**	**1,350**

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

RENWICK GALLERY - 36

OPP Proj. Mgr: Tom Myers 202 287-2143
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Interior Repairs	100 B2	50 B2	100 B2	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
Stone Repointing	0	0	200 A1	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Disabled Entrance Access (983602)	0	750 A3	0	0	0	0
Exterior Lighting (983602)	0	300 A2	0	0	0	0
5. UTILITY SYSTEM REPAIR						
Grand Stair Lighting	75 A1	0	0	0	0	0
Grand Salon Lighting	400 A2	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	575	1,100	300	0	0	0

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03* 0	*FY'04*	*FY05*
Master Plan	0	0	250 B1	0	0	0
	0	0	250	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	575	1,100	550	0	0	0

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (36 - RGA)	575	1,100	550	0	0	0

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

SILVER HILL FACILITY - 38

OPP Proj. Mgr.: Les Heacock 202 287-2145
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repairs	250 B	250 B	250 B	250 B	250 B	250 B
Building 17 (963807)	500 A1	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
Building 10 Roof Repair (983802)	0	500 A1	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Buildings 14 & 15 Safety/Security	0	0	120 C1	0	0	0
Building 17 (NMAH) (963807)	150 A1	0	0	0	0	0
Asbestos Encap. Bldgs. 15, 16, &18	0	0	0	300 B3	300 B3	300 B3
Asbestos Monitoring	0	0	0	150 B3	150 B3	150 B3
5. UTILITY SYSTEM REPAIR						
Environmental Improvements, Bldgs... 15/16	0	0	0	0	300 B2	0
Replace HVAC Equip. 18	25 B2	0	0	0	0	0
Electrical Upgrade & Environmental Control	0	0	0	0	0	500 B2
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	925	750	370	700	1,000	1,200

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	925	750	370	700	1,000	1,200

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (38 - SHF)	925	750	370	700	1,000	1,200

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

SMITHSONIAN ASTROPHYSICAL OBSERVATORY - 51

OPP Proj. Mgr: Tom Myers 202 287-2143
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repairs, All Locations (985102)	110 B	125 B	125 B	150 B	150 B	200 B
Whipple Road Repair & Improvement (915103a)	0	500 B1	0	0	1,000 B1	0
Replace Heated Road Elements (915103a)	150 A2	0	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
Paint Exterior MMT (985103)	0	50 B1	0	0	0	0
Replace Commons Building Deck	0	0	60 B1	0	0	0
3. FIRE DETECTION & SUPPRESSION						
Fire Detection System Upgrade	0	0	0	150 B3	0	0
Sprinkler System Summit Dorm	0	0	0	150 B3	0	0
FP Improvements SMA Control Bldg	0	0	0	100 B3	0	0
4. ACCESS, SAFETY & SECURITY						
No Projects Identified	0	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
Emergency Generator Computer Facility	100 A1	0	0	0	0	0
Water System Improvements	170 B2	0	400 B2	0	0	175 B2
Replace Communications Hardware	0	0	70 B2	0	0	0
Replace FM Repeater	0	0	0	0	60 B2	0
Base Camp Microwave Link	0	0	0	0	150 B2	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	530	675	655	550	1,360	375

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	530	675	655	550	1,360	375

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
MMT Building Modifications, Phases 3 (975107)	0	0	400 B2	0	0	0
Dorm Extension, Phases A and B (975108)	0	350 B1	400 B1	0	0	0
SMA Control Building Extension	0	0	0	500 B1	0	0
Knoll Two Telescope Facility	0	0	0	0	0	800 C
Knoll 3 Telescope Site Development	0	0	0	0	0	0
Central Building Remodeling, Oak Ridge	0	0	0	0	350 C	0
Technology Upgrades	0	100 B	100 B	100 B	100 B	100 B
Knoll 1 Facility	0	0	0	0	0	200 C
	0	450	900	600	450	1,100

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (51 - SAO)	530	1,125	1,555	1,150	1,810	1,475

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

SMITHSONIAN ENVIRONMENTAL RESEARCH CENTER - 44

OPP Proj. Mgr: Tom Myers 202 287-2143
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repairs	150 B	150 B	200 B	200 B	250 B	250 B
Road Repairs & Paving (904409B)	0	0	125 B1	0	0	500 C1
Paint & Repair Water Tower ((FY05+)	0	0	0	0	0	80 C1
Muddy Creek Bridge (FY05+)	0	0	0	0	0	0
Cory Building Rehab	0	300 A2	0	0	0	0
2. FACADE, ROOF & TERRACE REPAIR						
Small Bldg. Roof Repairs	0	0	50 C1	0	50 C1	0
3. FIRE DETECTION & SUPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Accessibility Improvements (974403)	0	0	150 B3	0	0	150 B3
Security Lighting Improvements (984404)	0	100 B3	200 B3	0	0	0
Perimeter Fire Lane	0	0	0	0	0	0
Security & Telecommunications System Upgrade	0	0	0	0	300 B2	0
Security Kiosk	0	0	0	0	0	0
Chemical Storage Building Addition	0	0	0	0	0	150 B2
5. UTILITY SYSTEM REPAIR						
Replace Fans & Plumbing, Building 100	0	0	0	0	150 B2	0
Sanitary Sewer Repair	500 A3	0	0	0	0	0
Utility Connection to Waterfront	0	300 B2	0	0	0	0
HVAC System Upgrade, Bldgs. 500 & 100	0	0	0	0	0	80 C2
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	650	850	725	200	750	1,210

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL R&R PROGRAM	**650**	**850**	**725**	**200**	**750**	**1,210**

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Stormwater Mgt.(944408)/Approach Road (964404)	900 A	0	0	0	0	0
Visiting Scientist Housing	0	400 A	600 A	0	0	0
Lab Modules, Phase 5 (1) (974404)	0	350 A	0	0	0	0
Dormitory Expansion	0	0	0	500 B	0	0
Addition to Wet Laboratory (1) (974408)	0	0	500 B	0	0	0
Boat Storage Building (IIA) (974409)	0	0	0	500 C	0	0
Building #300 Renovation (IIA)	0	0	0	0	0	300 B
Facilities Maintenance Building (IIB)	0	0	0	0	900 B	0
Greenhouse (IIB)	0	0	0	600 B	0	0
	900	750	1,100	1,600	900	300

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (44 - SERC)	**1,550**	**1,600**	**1,825**	**1,800**	**1,650**	**1,510**

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

SMITHSONIAN INSTITUTION BUILDING - 32

OPP Proj. Mgr: Aris T. Allen 202 287-2043
FAX 202 287-3018

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Miscellaneous Repairs (983202)	50 B2	50 B2	50 B2	50 B2	50 B2	50 B2
2. FACADE, ROOF & TERRACE REPAIR						
Paint Exterior Windows	445 B1	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
No Projects Identified	0	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
No Projects Identified	0	0	0	0	0	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	495	50	50	50	50	50

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Master Plan Concept	500 B2	0	0	0	0	0
Design Costs	0	0	0	2,000 B2	2,000 B2	0
Construction	0	0	0	0	0	0
	500	0	0	2,000	2,000	0

	FY'00	**FY'01**	**FY'02**	**FY'03**	**FY'04**	**FY05**
TOTAL R&R PROGRAM	**995**	**50**	**50**	**2,050**	**2,050**	**50**

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
SIB/AIB Miscellaneous Space Modifications	100 B2	100 B2	100 B2	100 B2	100 B2	100 B2
	100	100	100	100	100	100

	FY'00	**FY'01**	**FY'02**	**FY'03**	**FY'04**	**FY05**
FACILITY TOTAL (32 - SIB)	**1,095**	**150**	**150**	**2,150**	**2,150**	**150**

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

SMITHSONIAN TROPICAL RESEARCH INSTITUTE - 50

FAX 011-507-227-8149 (Panama)

OPP Proj. Mgr: Fernando Pascal 202-786-2099 Ext. 8096

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
General Repairs/Painting	150 B	150 B	185 B	185 B	185 B	185 B
Ancon Road Repair	90 B3	0	0	0	0	0
BCI Sheet Piling Repairs/Replacement	235 B1	0	0	0	0	0
Tivoli Repair	0	0	1,600 B2	0	0	0
Naos Facilities Repairs	0	0	80 B3	0	0	0
Gamboa Interior Repairs	0	0	20 B3	0	0	0
Ancon Interior Repairs	0	0	20 B3	0	0	0
BCI Facility Improvements	0	0	150 A2	0	0	0
Haskins Bldg. Renovation, BCI	0	0	0	0	125 C2	0
2. FACADE, ROOF & TERRACE REPAIR						
Tupper Facade & Roof Repair	0	0	0	275 B3	0	540 B3
Naos Facade & Roof Repair	0	0	0	180 B3	0	0
Ancon/Culebra Exterior Repair	0	0	0	65 B3	0	0
BCI Exterior Repair	0	0	0	0	445 B2	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Disabled Access, Gamboa/BCI/Boat	0	100 B3	0	0	0	0
BCI Access & Safety	0	35 B3	0	20 B3	0	0
Naos Accessibility & Facade Improvements	0	300 A	0	0	0	0
Tupper/Tivoli/Naos Repairs	0	0	0	30 B3	0	0
Security Improvements	500 B3	0	0	0	0	0
5. UTILITY SYSTEM REPAIR						
Repair/Replace 356 Naos A/C System	0	125 B1	0	0	0	0
Water System Improvements	0	170 B2	0	0	0	0
Emergency Generator Computer Facility	30 A1	0	0	0	0	0
Tupper/Tivoli Elec/HVAC	0	0	315 B3	0	0	0
BCI Utility System Repair	0	0	0	0	250 B1	0
Naos/Gamboa/Culebra/Ancon	0	0	0	135 B3	0	0
Communications	0	0	0	70 B2	210 B2	0
6. ADVANCED PLANNING & INSPECTION						
No Projects Identified	0	0	0	0	0	0
	1,005	880	2,370	960	1,215	725

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	**1,005**	**880**	**2,370**	**960**	**1,215**	**725**

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Staff Housing - BCI (935004)	500 A	0	0	0	0	0
Game Warden Facilities	0	0	0	0	100 D	0
Aquarium Building Renovation - Naos	0	60	0	450 A	0	0
Gigante Facility Upgrade	0	0	0	300 B	0	0
BCI Small Boat Haul Out	0	0	125 B	0	0	0
Visitors Center - Tivoli	0	0	0	0	170 C	0
Arboretum - Tivoli	0	0	0	0	230 C	0
Pipeline Road Improvements	0	0	0	0	300 C	0
BCI Old Herbarium	0	0	0	0	0	125 C
	500	60	125	750	800	125

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
FACILITY TOTAL (50 - STRI)	**1,505**	**940**	**2,495**	**1,710**	**2,015**	**850**

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

MULTIPLE SITE PROJECTS - 00

REPAIR, RESTORATION AND ALTERATION OF FACILITIES PROGRAM

REPAIR AND RESTORATION	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
1. GENERAL REPAIR						
Replace Greenhouses 6-10, USSAH	0	0	0	0	0	0
Personnel, Reprographics and Library (947502A & 969901)	600 A	600 A	600 A	600 A	600 A	600 A
Craft Services, All Facilities (989901)	1,500 B	1,500 B	1,500 B	1,500 B	1,500 B	1,500 B
Structural Engineering, All Facilities	60 A	60 A	60 A	60 A	60 A	60 A
General Repairs, All Facilities	1,500 B	1,500 B	1,500 B	1,500 B	1,500 B	1,500 B
2. FACADE, ROOF & TERRACE REPAIR						
No Projects Identified	0	0	0	0	0	0
3. FIRE DETECTION & SUPPRESSION						
No Projects Identified	0	0	0	0	0	0
4. ACCESS, SAFETY & SECURITY						
Asbestos Abatement, all locations	250 B2	250 B2	250 B2	250 B2	250 B2	250 B2
Asbestos Monitoring, all locations	200 B2	200 B2	200 B2	200 B2	200 B2	200 B2
Lead Abatement, all locations	250 B2	250 B2	250 B2	250 B2	250 B2	250 B2
Escalator/Elevator Safety Improvements (977002)	250 B3	500 B3	0	0	0	0
Miscellaneous Access/Safety/Security Services	0	0	0	0	0	0
Guard Services, All Locations (989902)	500 A	500 A	500 A	500 A	500 A	500 A
5. UTILITY SYSTEM REPAIR						
Misc. Utility Repair	500	500	500 B3	500	500	500
6. ADVANCED PLANNING & INSPECTION						
Advance Planning & Design Funds	1,900 B	2,000 B	2,000 B	2,000 B	2,000 B	2,000 B
	7,510	7,860	7,360	7,360	7,360	7,360

7. MAJOR CAPITAL RENEWAL	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
No Projects Identified	0	0	0	0	0	0
	0	0	0	0	0	0

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL FOR R&R PROGRAM	7,510	7,860	7,360	7,360	7,360	7,360

ALTERATIONS & MODIFICATIONS	*FY'00*	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
A&M Planning & Design	350 A	420 A	680 A	475 A	1,175 A	1,740 A
SIL: Library Modifications, Various Sites	0	525 B	0	525 B	525 B	525 B
OEC: Space Renovation @ SISC	0	60 B	0	0	0	0
All Other Projects, to be determined	0	0	0	0	0	0
	350	1,005	680	1,000	1,700	2,265

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
TOTAL (00 - MULTI)	7,860	8,865	8,040	8,360	9,060	9,625

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

Program Summary By Facility

($ in 000s)

	FY'00	FY'01	FY'02	FY'03	FY'04	FY05
Anacostia Museum						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	0	60	60	60	60	210
Arts and Industires Building						
MAJOR CAPITAL RENEWAL	4,500	2,000	9,620	11,000	17,500	16,700
Other Repair and Restoration	0	0	0	0	0	0
Cooper Hewitt, National Design Museum						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	50	1,685	410	60	410	60
Freer Gallery of Art						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	45	170	60	20	370	620
Hirshhorn Museum and Sculpture Garden						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	0	1,800	1,000	0	5,350	0
Museum Support Center						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	80	75	1,400	275	250	500
National Air and Space Museum						
MAJOR CAPITAL RENEWAL	0	0	0	0	500	0
Other Repair and Restoration	825	825	75	75	1,700	325
National Museum of the American Indian George Gustav Heye Center						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	255	105	0	0	0	0
National Museum of the American Indian Research Br. & Cultural Resources Ctr.						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	255	150	70	70	70	70
National Museum of American History						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	1,475	1,950	550	0	1,000	4,375
National Museum of Natural History						
MAJOR CAPITAL RENEWAL	10,305	10,655	6,625	8,520	8,755	13,825
Other Repair and Restoration	445	1,060	50	50	250	1,045
National Zoological Park						
MAJOR CAPITAL RENEWAL	900	4,625	4,200	2,800	2,950	2,950
Other Repair and Restoration	5,100	5,375	5,800	7,200	7,050	7,050

Smithsonian Institution

Repair, Restoration and Alteration of Facilities Program - Five Year Plan

	($ in 000s)					
	FY'00	*FY'01*	*FY'02*	*FY'03*	*FY'04*	*FY05*
Patent Office Building						
National Museum of American Art						
National Portrait Gallery						
MAJOR CAPITAL RENEWAL	8,000	17,000	17,000	18,000	0	0
Other Repair and Restoration	0	0	0	0	0	0
Quadrangle Building						
National Museum of African Art, Arthur M.						
Sackler Gallery, S. Dillon Ripley Center						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	475	300	1,000	50	50	1,350
Renwick Gallery						
MAJOR CAPITAL RENEWAL	0	0	250	0	0	0
Other Repair and Restoration	575	1,100	300	0	0	0
Silver Hill Facility						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	925	750	370	700	1,000	1,200
Smithsonian Astrophysical Observatory						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	530	675	655	550	1,360	375
Smithsonian Environmental Research Ctr.						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	650	850	725	200	750	1,210
Smithsonian Institution Building (Castle)						
MAJOR CAPITAL RENEWAL	500	0	0	2,000	2,000	0
Other Repair and Restoration	495	50	50	50	50	50
Smithsonian Tropical Research Institute						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	1,005	880	2,370	960	1,215	725
Multiple Site Projects						
MAJOR CAPITAL RENEWAL	0	0	0	0	0	0
Other Repair and Restoration	7,510	7,860	7,360	7,360	7,360	7,360
Total Repair and Restoration						
MAJOR CAPITAL RENEWAL	24,205	34,280	37,695	42,320	31,705	33,475
Other Repair and Restoration	20,695	25,720	22,305	17,680	28,295	26,525
Total R&R	**44,900**	**60,000**	**60,000**	**60,000**	**60,000**	**60,000**
Total Alterations & Modifications	**3,000**	**4,000**	**5,000**	**6,000**	**6,000**	**6,000**
Grand Total, RR & A	47,900	64,000	65,000	66,000	66,000	66,000

Smithsonian Institution

Planned Major Capital Renewal Projects FY 2000 - FY2005

($Millions)

Building	Spent To Date *	Planned Future Funding **						Total Estimated Project Cost
		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	
Natural History								
Design	9.6	0.7	1.0		2.0		3.0	
Construction	39.8	9.6	9.7	6.6	6.5	8.8	10.8	
TOTAL	49.4	10.3	10.7	6.6	8.5	8.8	13.8	130.0
CURRENT STATUS: Completed construction includes replacement of chiller plant & emergency generator; asbestos abatement in attics & mechanical spaces; construction of new rooftop mechanical rooms; window replacement in wings; some elevators and communications upgrades, &								
American Art & Portrait Gallery								
Design	8.6							
Construction		8.0	17.0	17.0	18.0			
TOTAL	8.6	8.0	17.0	17.0	18.0	0.0	0.0	110.0 - 120.0
CURRENT STATUS: Design is underway, with construction scheduled to begin in Spring 2000. $60 millon is included in RR&A for system renewal, life safety and accessibility; enhancement of public space and preservation of historic integrity are additional.								
Smithsonian Castle								
Design	0.4	0.5			2.0	2.0		
Construction								
TOTAL	0.4	0.5	0.0	0.0	2.0	2.0	0.0	35.0 - 50.0
CURRENT STATUS: Programming and conceptual design will begin in FY 2000.								
Arts & Industries								
Design	2.4	2.5	2.0					
Construction		2.0		9.6	11.0	17.5	16.7	
TOTAL	2.4	4.5	2.0	9.6	11.0	17.5	16.7	50.0 - 60.0
CURRENT STATUS: Design is underway and will be complete in FY 2001; renovation is planned for 2002.								
National Air and Space Museum								
Design	0.2					0.5		
Construction								
TOTAL	0.2	0.0	0.0	0.0	0.0	0.5	0.0	43.0
CURRENT STATUS: Master planning to begin in FY 2004.								
Renwick Gallery								
Design				0.3				
Construction								
TOTAL	0.0	0.0	0.0	0.3	0.0	0.0	0.0	11.0
CURRENT STATUS: Master planning to begin in FY 2002.								
National Zoological Park								
Design		0.9	1.8	2.0				
Construction			2.8	2.2	2.8	2.9	3.0	
TOTAL	0.0	0.9	4.6	4.2	2.8	2.9	3.0	75.0 -100.0
CURRENT STATUS: Plans include renewal projects in Mane Building, Bear Habitat, Deer & Tapir Buildings, Australia Building, Elephant House at Rock Creek, and Consolidated Maintenance Facility at Front Royal. Road and bridge work at Rock Creek is also planned. Inspection of Front Royal site is underway to identify additional needs.								
PROGRAM TOTALS	**61.0**	**24.2**	**34.3**	**37.7**	**42.3**	**31.7**	**33.5**	

* includes funds received through FY 1999

** assumes funding in RR&A of $47.9 million in FY 2000 and $64 million in FY 2001and $66 million annually beginning in FY 2002

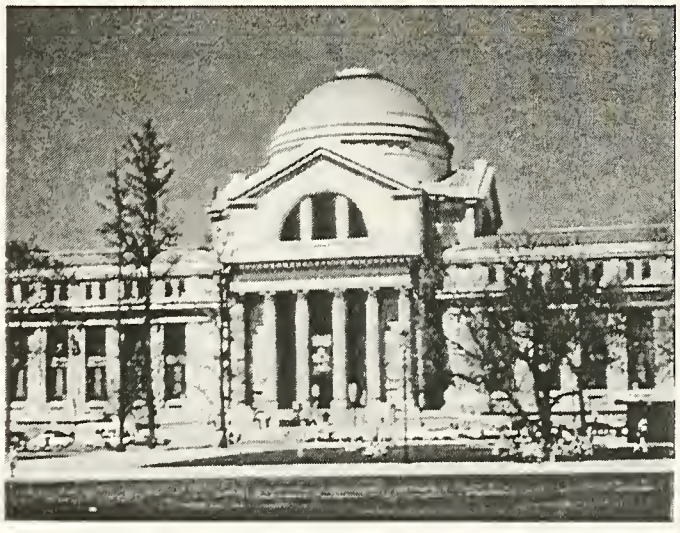
National Museum of Natural History

Background Facts

Area in square meters:	145,017
Area in square feet:	1,561,000
Architect:	Hornblower and Marshall; Mills, Petticord and Mills
Architectural style:	Beaux-Arts
Construction:	Steel and masonry
Funding:	1903 Original appropriation by Congress
Construction:	Original building between 1904 and 1911, with the wings added in 1960-1964 and the east and west courts in 1998 and 1999
Major renovations:	Upgraded some of the mechanical systems between 1962-1964

History

The National Museum of Natural History is one of the leading international centers for research on natural history and anthropology. In 1911 the natural history collections in the Arts and Industries Building were moved to the new National Museum of Natural History building. The building, which houses one of the Institution's most popular museums, accommodates exhibition, storage, education and research spaces. The infilling of the East Court provides additional space for research and collections activities, and public and educational support spaces. The West Court houses the new Discovery Center, staff offices, restaurants, and a new theater.

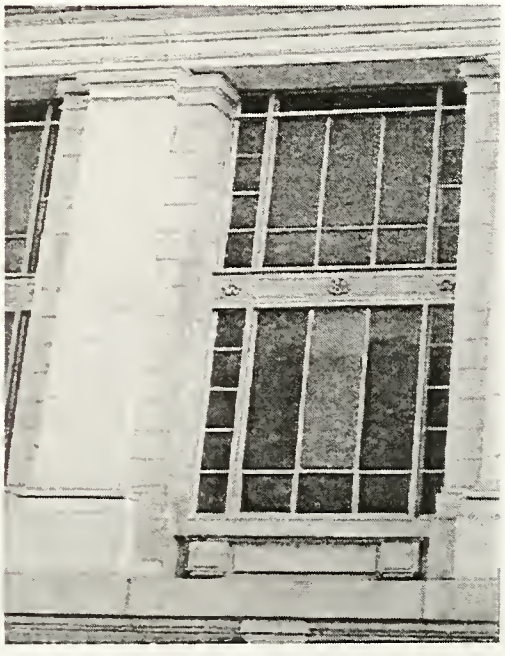


National Museum of Natural History

Current Conditions

- Original building window system, roof system above the Rotunda and some of the major halls were originally installed in 1909; other portions of the main roofing system date from the 1950s; all are in need of major repair or replacement.
- The 40 year old HVAC system, control system, fire protection and suppression system and the laboratory exhaust system are all ten years past their projected normal useful life and break down frequently.
- The automatic temperature control system is obsolete and does not operate satisfactorily to maintain stable temperature and humidity necessary for long term preservation of the collections.
- 90 percent of the electrical lighting and power panels in the building are over 30 years old.
- The emergency power system is inadequate to operate the more than thirty elevators in the building in the event of a major power outage.
- Communications systems are not adequate to meet current computer requirements.

Damaged slate on roof



Damage to exterior granite columns

Impact of Deficiencies

- Staff and visitors alike are impacted by the life safety and accessibility modifications required to meet contemporary codes; these include asbestos and lead paint abatement or encapsulation, upgrading fire protection systems, and creation of an accessible entrance from the Mall.
- Stable environmental conditions cannot be provided currently, placing the collections at great risk. Failure of air handling equipment causes sporadic and frequent fluctuations in both temperature and humidity. Steam leaks from old piping systems and valves, causing damage to building fabric and potentially to collections.
- Some of the electrical panels, dating from 1910, present a potential safety hazard. Other panels installed in the 1960s no longer meet established safety standards, and replacement circuit breakers are no longer available.
- Many areas of the building have no sprinkler coverage, or inadequate coverage, placing occupants and collections at risk in the event of fire.
- The emergency power systems are inadequate and outdated, and few of the more than thirty elevators would be able to respond under emergency power conditions.

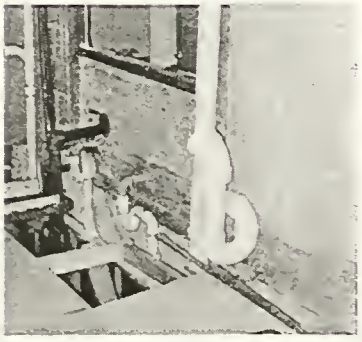
Damaged slate on roof

Water damage to interior plaster

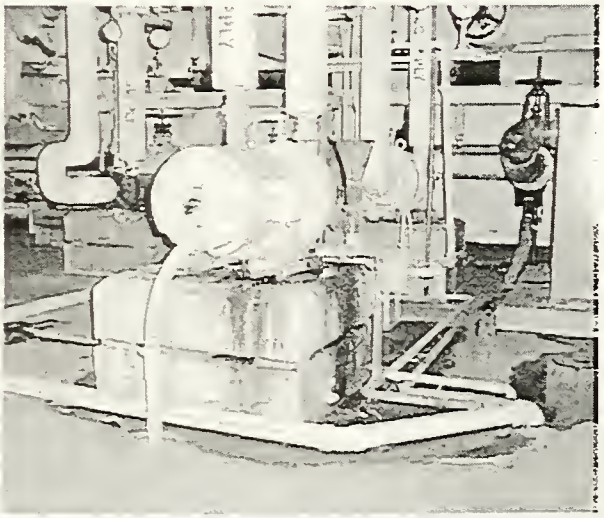
National Museum of Natural History

Impact of Deficiencies, *continued*

- An extensive alcohol collection, classified by code as an extreme hazardous condition, is not adequately covered under current fire protection or life safety requirements.
- Inadequate ventilation in areas used for darkrooms, labs, and shops, and the generally deteriorated condition of the HVAC ductwork adversely impact air quality.
- Existing mezzanines (over 130,000 SF) do not meet fire separation or accessibility requirements.
- Roof leaks cause damage to both collections and building fabric.



Damaged plumbing in attic



Deteriorated & leaking equipment in mechanical room

National Museum of Natural History

Required Actions

Estimated Cost $80,000,000

Remaining renovation needs, as described below, are currently being scheduled in funding increments over the next ten years.

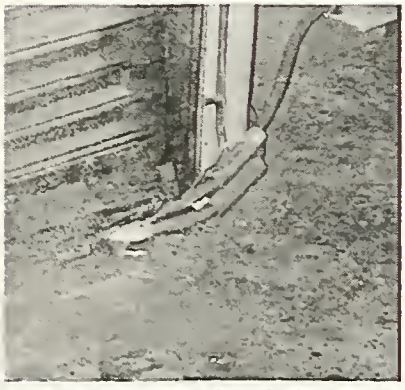
- Roof repair and façade repointing.
- Replacement of HVAC equipment, ductwork, electrical wiring, asbestos and lead abatement/encapsulation, upgrade to fire protection systems, storm water systems, power systems, window replacement, and accessible staff toilets.
- Mezzanine Renovation; under study to determine extent and cost of renovating mezzanines within the building to meet acceptable fire protection and accessibility standards.
- Data Communications Master Raceway; ongoing project to install a complete data communication distribution system throughout the building.
- Security Upgrades; ongoing project to update existing security system for the Museum. (Part of the Security Modernization Project.)
- Accessible Mall Entrance; project to create an accessible entrance to the Museum from the Mall.
- Chemical Control Facility; project to create a safe storage facility for the variety of hazardous chemicals used in the scientific research departments of the Museum.
- Utility Tunnel Repair; project to repair and replace deteriorated piping systems in the tunnels beneath the ground floor of the Museum, includes primary fire protection sprinkler mains, storm and sewage mains, and miscellaneous water and steam piping.

National Museum of Natural History

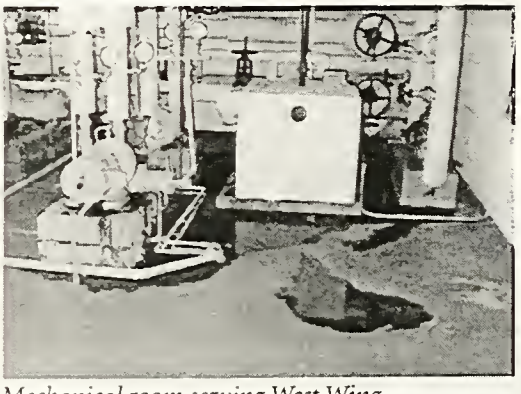
Analysis and Impact of Deferral

- Continued deterioration of the building fabric.
- Increased risk of collection damage due to water, temperature and humidity fluctuations and fire.
- Increased cost of maintenance and emergency repair for 40+ year old mechanical and electrical equipment.
- Increased risk of lost time for staff due to poor environmental conditions.
- Increased risk of flooding due to failure of piping in building tunnel system.
- Increased risk of partial building closure due to system failure.

Damaged roofing and flashing



Roll-up doors at loading dock



Mechanical room serving West Wing

National Museum of Natural History

Recent Work Completed or In Progress

1987 Master Plan developed. Current building systems date from 1962-64. Established need for total system renovation including HVAC, asbestos and lead abatement, modifications to meet ADA requirements, provide for full sprinkler coverage, replace outdated electrical wiring and panels, repair deteriorating building envelope (windows, doors, roof), and upgrade communications and security systems.

Total estimated construction cost in 1987: $122,000,000

1989	Replace central cooling plant and emergency generator	$ 11,062,000
89-91	Asbestos abatement in attics/mechanical spaces	$ 2,200,000
1992	Build HVAC rooftop mechanical rooms, replace windows in East & West Wings	$ 4,540,000
1993	HVAC Control Upgrade	$ 600,000
1994	Asbestos abatement, ADA compliance, Steam repairs, Communications upgrades	$ 17,000,000
1995	Elevator upgrades, Communications upgrades	$ 11,000,000
1997	HVAC Installation for East Wing, renovation of 6th floor East wing and 3rd floor Main Building, installation of temporary swing space for renovation	$ 7,500,000
1998	Communications upgrade, Rotunda Renovation, Security upgrade	$ 2,200,000
1999	HVAC Installation for West Wing,	$ 4,700,000
	Renovation of 5th and 4th floors East Wing	$ 5,400,000

The chilled water generation system, incoming electric switch gear, East and West window systems in the Wings, the roof of the East and West Wings, and the HVAC equipment for the sixth floor of the East Wing have been upgraded and repaired.

National Museum of Natural History

Related Studies & Projects

1979 Fire Protection Master Plan, National Museum of Natural History
Prepared by Syska & Hennessy

1983 Environmental Control & Energy Conservation Study
Prepared by Mueller Associates

1984 Master Implementation Plan, National Museum of Natural History
Prepared by HSMM

1984 "National Museum of Natural History Sewage System Improvements"
Prepared by Peck, Peck and Associates, Inc.

87-88 "National Museum of Natural History Master Implementation Plan: Executive Summary & Plan Analysis"
Prepared by HSMM

1988 Penthouse Structural Feasibility Study
Prepared by HSMM

1989 "Economic and Programmatic Impact on the National Museum of Natural History of HVAC Project Under the Master Implementation Program"
Prepared by Arthur D. Little, Inc.

1989 "Roof Survey and Study: NMNH, NMAA and Portrait Gallery, HMSG"
Prepared by Richter, Cornbrooks, Gribble Inc.

1989 Audio-Visual Electric Study
Prepared by James Posey

1990 Asbestos Abatement Study, National Museum of Natural History
Prepared by Hygienetics, Inc

1991 SI-Accessibility Study, National Museum of Natural History
Prepared by Heery International

1992 Rotunda Restoration Study
Prepared by Geier, Brown & Renfrow

Patent Office Building

American Art & Portrait Gallery

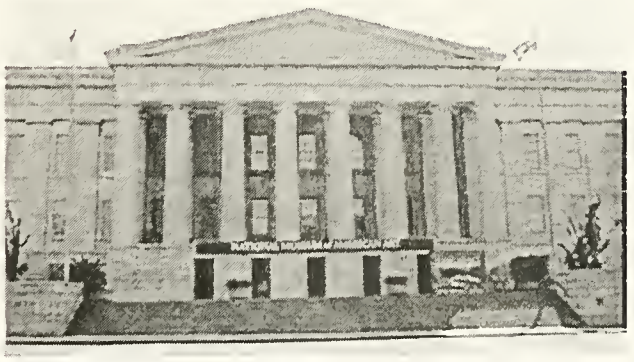
Background

Area in square meters:	30,908
Area in square feet:	332,700
Architect:	Robert Mills and William P. Elliot, Thomas U. Walter and Edward Clef
Architectural style:	Neoclassical
Construction:	Masonry with iron beams
Funding:	Transferred by General Services Administration in 1958
Construction:	Constructed between 1836 and 1868
Major renovations:	Renovation for museum use 1964-1968

History

The Patent Office Building (POB) houses the Archives of American Art, the National Portrait Gallery and the National Museum of American Art. The Archives of American Art is the nations' largest repository of documentary and source materials relating to the history of visual arts in the United States. The National Portrait Gallery exhibits and studies portraits and the artists who created the portraits of major figures in American history. The National Museum of American Art is the nation's museum dedicated to the arts and artists of the United States from colonial times to the present. Its collections encompass painting, sculpture, graphic art, photography and folk art.

The building's four stories and basement enclose a central courtyard. The exterior of the building is constructed of marble, granite and sandstone. The POB is listed on the National Register of Historic Places as a National Historic Landmark.



Patent Office Building

American Art & Portrait Gallery

Current Conditions

- Mechanical and electrical systems are over 30 years old and break down frequently. The inefficient 2-pipe heating, ventilation, and air-conditioning (HVAC) system cannot meet the current heating and cooling loads in the building; air circulation is insufficient; humidity control is limited; and condensation collection is a major problem. Cooling tower leaks water. (Chiller plant also contains CFC's.)
- The existing electrical distribution system is overloaded and inadequate. Current clearances around the electrical transformers do not meet current code requirements. Switchgear, panel boards, and distribution networks are deteriorated and obsolete. Replacement parts are no longer available.
- Other utility systems are seriously deteriorated including fire protection, plumbing, steam distribution, and communications systems. Some of the fire alarm system wiring is original to the building, and contributes to malfunctions in the system.
- The building's elevators break down frequently, preventing public access.
- The building facade has been damaged by acid rain and air pollution, the window frames are deteriorated and failing, and several interior surfaces have been severely damaged by water intrusion and condensation.
- Main entrances to the building and most restrooms are not accessible to persons with disabilities, and do not meet current codes and standards.
- Asbestos is present throughout the building, and must be abated before repairs can be accomplished.

Interior damage due to condensate leaks

Typical condition of deteriorated pipes

Patent Office Building

American Art & Portrait Gallery

Impact of Deficiencies

- The existing 1960's vintage building systems have frequent and extensive breakdowns requiring emergency repairs, at significant cost, to fix systems that will be totally replaced by the scheduled MCR project. Museum functions are continuously disrupted by these system failures.

- In 1998, the HVAC system had to be shut down for two months to replace about 200 inoperable valves in the distribution piping. That same year, a corroded fan coil unit drip pan caused water to leak into the collection storage room below it. A month later, flooding from rusted piping temporarily closed an exhibition gallery.

- The HVAC system can not maintain required environmental conditions for art storage and conservation, and widely fluctuating temperature and humidity increase the risk of permanent damage to the collections. These conditions also promote the growth of mold and microorganisms, and negatively impact the comfort of the occupants as well as the preservation of the collections and building fabric.

- Outdated equipment is costly to operate in terms of energy conservation, demand for staff and frequency of repairs; and parts are not available.

- Roof, facade, and window leaks cause interior damage, and place the collections at great risk.

- Several public areas are inaccessible to people with disabilities.

- Failures and overloaded conditions in the electrical distribution create serious fire and safety hazards.

- Communication system incapable of supporting modern demands for data and voice transmission directly impacts staff efficiency.

- Asbestos throughout the building makes access for inspection, maintenance, and repair disruptive, difficult, and costly. Abatement is required before repairs can be accomplished.

Patent Office Building

American Art & Portrait Gallery

Required Actions

Estimated Cost $110,000,000-$120,000,000

- The five-year RR&A program includes $60 million for HVAC, electrical, plumbing, fire protection, communication and other building system renewal, and safety and accessibility modifications to the building. Improving the building's functionality, enhancing space for public programs and education, and preserving the historical integrity of this landmark building are additional costs.

- Replace the cooling tower, changing location and mounting configuration to eliminate leaks.

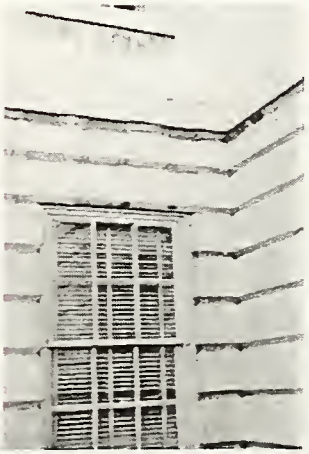
- Replace mechanical and electrical equipment including boilers, pipes, air handling units, chillers, pumps, electrical transformers and substations, and fire pumps with new energy efficient equipment.

- Install new air distribution and control system, supply and return air grilles, and temperature and humidity controls by zone.

- Replace or refurbish all of the existing elevators and lifts with equipment that meets current accessibility and code requirements. Install new elevators in the north wing and the Great Hall to increase accessibility.

- Implement accessibility improvements throughout the building. This includes widening the door openings in the south, east and north for improved visitor access to the galleries, providing accessible restrooms adjacent to each lobby and in event spaces, and modifications necessary to provide accessible F and G Street entrances.

Example of inadequate electrical and communication systems



Condition of exterior

Patent Office Building

American Art & Portrait Gallery

Required Actions

- Replace existing chillers with units containing environmentally safe refrigerants.
- A new PEPCO vault will be located in the west wing , with transformers in the west and north wings. Provide new light and power panels in four rooms on each floor. Provide new electrical main and branch circuit wiring and switchgear.
- A new control panel and console will be installed in the security office and control room. Monitoring devices including cameras (pan/tilt/zoom and fixed), motion detectors, glass break sensors, window contacts, and alarm devices will be provided in the galleries.
- Relocate the fire alarm main control panel to the security offices. Install smoke detectors and audio/visual fire alarm devices to monitor galleries. Install new fire alarm panels in four rooms on each floor, in proximity to the security panels. Install stand pipes to provide fire protection at each floor, and new sprinklers in the mechanical, electrical and office spaces.
- Remove or encapsulate hazardous materials such as asbestos and lead paint.
- Install communications equipment capable of multimedia voice and data transmission.
- Building systems must be modernized with minimal impact on the historic fabric of the building, while restoring public space.
- Restore space currently used for staff activities to gallery and public use.

Exterior damaged by acid rain

Patent Office Building

American Art & Portrait Gallery

Analysis & Impact of Deferral

- Major systems within the building are failing at a rapidly increasing rate. Deferral of this renovation will increase the rate of deterioration to the building structure and interior finishes, elevate the level of risk to the collections, and continue to subject visitors and staff to an uncomfortable and substandard environment.

- Mechanical equipment is at the end of its service life. Equipment is maintained by special fabrication of components to extend the equipment. Risk of extensive mechanical system failure without major renewal could result in emergency closure of part of building to public or staff, and costly relocation of activities.

- Greater cost than benefit to repair obsolete equipment. Limited resources are used on emergencies, rather than cost effective planned maintenance. The cost of repair escalates faster as the rate of deterioration increases in older systems.

Burst pipes are often embedded in walls.

Facade damaged by acid rain and air pollution.

Patent Office Building

American Art & Portrait Gallery

Recent Work Completed and In Progress

1995	Emergency roof patching	$ 23,000
1998	Replace stone lintel cladding at entry	$ 350,000
1999	Repair apse windows	$ 110,000
1999	Roof replacement and skylight repair is in progress, scheduled completion 12/99.	$ 8,200,000

The Patent Office Building will close to the public in January 2000, allowing the occupants a 3-4 month time frame to prepare the collections for loan or storage and complete the move to the Victor Building. Schematic design for the Major Capital Renewal is complete, and design is continuing. Initial construction work will include asbestos removal and abatement of hazardous materials, followed by the required demolition. This will allow replacement of the building services, exterior repairs, and interior renovation to proceed with minimum impediments. The work is expected to be completed in about three years.

Patent Office Building

American Art & Portrait Gallery

Related Studies & Projects

1981 "Planning and Development Status Report for the Area Surrounding the American Art and Portrait Gallery and the General Post Office Building"
Prepared by: Harry Weese and Associates

1983 "Draft Report: Functional Space Use Study and Recommended Conceptual Plan"
Prepared by E. Verner Johnson and Associates, Inc.

1984 "Functional Space Use Study and Recommended Conceptual Plan"
Prepared by E. Verner Johnson and Associates, Inc.

1985 "Functional Space Use Study and recommended Conceptual Plan: GPOB: Cost Projection"
Prepared by: E. Verner Johnson

1987 "Program Requirements and Spatial Analysis for NMAA, NPG, and AAA Phase I Draft"
Prepared by Hartman-Cox Architects

1988 "Planning and Development Status Report for the Area Surrounding the American Art and Portrait Gallery and the General Post Office Building"
Prepared by: Harry Weese and Associates

1991 "A/E Services to Design the Renovation of the General Post Office Building and the Patent Office Building"
Prepared by E. Verner Johnson and Associates, Inc.

1992 "Report of a Structural Load Test: General Post Office Building"
Prepared by CTI

1998 "Evaluation of Space Alternatives for Patent Office Building Renovation Requirement Addendum"
Prepared by Zell Partners, Ltd

Arts and Industries Building

Background

Area in square meters:	15,691
Area in square feet:	168,900
Architect:	Cluss and Schulze; Montgomery Meigs as consultant
Architectural style:	High Victorian
Construction:	Masonry
Funding:	Appropriated by Congress in 1879
Construction:	1881
Major renovations:	Galleries added 1897-1903; Addition of offices, systems upgrades 1972-1976

History

The Arts and Industries Building, known as the National Museum until 1911, is one of the finest examples of Victorian architecture in the Nation. Originally designed to house the rapidly growing National Museum, the building provides about 168,000 square feet of exhibit and administrative space. It was built solely to house the National Museum, previously housed in the Smithsonian Institution Building. Over the years the Arts and Industries Building has served as a repository for many special exhibits. However, space use has greatly changed to accommodate offices and administrative support as a result of the Smithsonian's growth as a public service institution for the nation.

The building presently houses numerous spaces for education, publication, research, and program and administrative support.

Arts and Industries Building

Current Conditions

- Mechanical, electrical, and other utility systems are over 30 years old, and breakdowns occur with increasing frequency.

- One of the cooling towers is out of service, and one of the chillers serving the A&I building as well as the Castle is close to the point when it can no longer be repaired. Maintenance is difficult and expensive on the entire system, controls are manual and the humidification system is virtually inoperable. Chiller plant uses chlorfluorcarbon refrigerants (CFC's).

- The main steam station leaks steam into the air continuously. Pressurized steam pipes, chilled water pipes, and electrical conduits are located in utility trenches under the first floor. These trenches contain asbestos and are filled with abandoned pipes and conduits, making access for inspection, maintenance and repair disruptive, difficult, and costly.

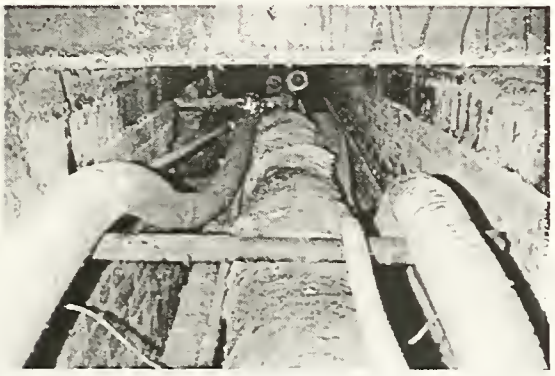
- The building has only two elevators which are frequently out of service for repairs. Many spaces are not accessible to persons with disabilities.

- The sewer occasionally backs up into the basement.

- Insulated windows were installed between 1982 and 1987, roofs were replaced piecemeal between 1975 - 1987. The older portion of the roof is badly deteriorated, air and moisture infiltration occurs at seams and flashing, causing leaks and flaking paint to fall on the exhibits.

- The fire alarm system is antiquated, has no additional capacity and provides no flexibility for future changes in the building.

- Asbestos found on pipe elbows and insulation, floor tile and mastic, duct insulation mastic and fire doors. There is paint containing lead in the building.



Asbestos on steam & water lines

Damage from water infiltration

Arts and Industries Building

Impact of Deficiencies

- Mechanical and electrical systems are incapable of supplying adequate power and air conditioning to meet minimal control standards. Excessive humidity levels negatively impact both the comfort of the occupants and preservation of the collections and building fabric. Major mechanical equipment occupies large areas, hindering other use by museum programs.

- Life safety improvements are required in existing egress enclosures and dedicated areas of refuge to meet current life safety codes. Areas of the building not served by the fire detection and suppression systems are at risk, and are not in compliance with current NFPA and ADA code requirements.

- Some accessibility improvements have been made, still several areas of the building do not meet the Smithsonian guidelines on accessibility for vertical transportation and controls.

- Rapidly evolving electronic information technologies utilized by the Smithsonian cannot be accommodated without additional communication system upgrades.

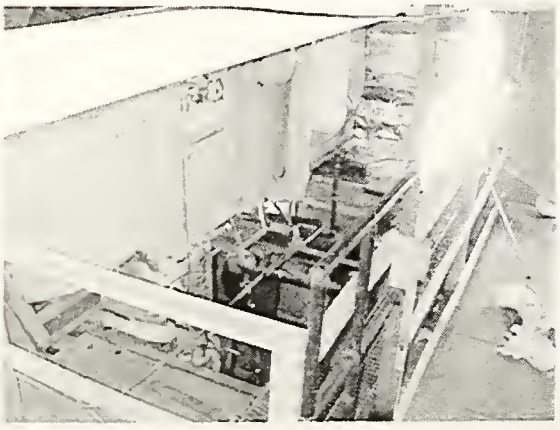
Water damage in mechanical room

Temporary wooden roof braces, securing structure

Impact of Deficiencies, Continued

- Parts are not available for the obsolete systems, and often need to be custom fabricated at a very high cost when emergency repairs are needed.
- The presence of asbestos makes access for inspection, maintenance, and repair disruptive, difficult, and costly. Abatement is required before repairs can be accomplished.
- Repairs to equipment, wiring and ductwork in utility trenches require moving exhibits and digging under floor.
- Existing chiller plant uses chlorofluorocarbon refrigerants (CFCs) which the Environmental Protection Agency has ruled should be eliminated.
- Roof and facade leaks, and the potential failure of obsolete mechanical and electrical systems put the collections and museum programs at risk.

Typical ceiling condition at underside of roof



Mechanical equipment

Arts and Industries Building

Required Actions

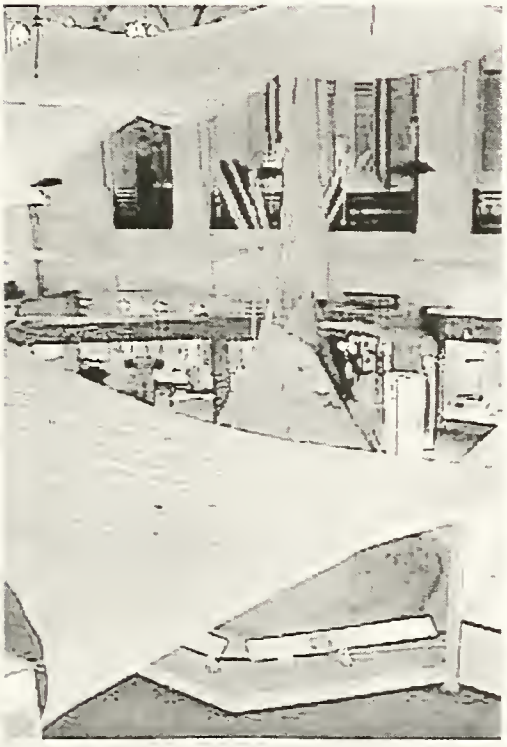
Estimated Cost: $50,000,000-$60,000,000

- Replace the mechanical, electrical, plumbing, fire protection, vertical transportation, and communications systems in the building, make modifications to ensure ADA compliance, abate or encapsulate asbestos and lead paint, and restore the interior to reflect its original architecture.
- Install a new energy efficient HVAC system to control and monitor environmental conditions within close tolerance to meet climate control requirements of collections, reduce the labor cost of operating and maintaining the systems, and meet contemporary codes and ventilation standards. Replace chillers, air handling equipment, cooling tower and distribution spine in a remote location.
- Relocate the HVAC equipment to improve maintenance and control, while also freeing up space for museum program and public use.
- Replace obsolete and malfunctioning electrical panel boards, switchgear and distribution systems with a system that meets current codes and program requirements.
- Replace fire detection and suppression systems to comply with NFPA and ADA requirements.
- Replace the roof and repair the facade to correct the water intrusion problem, replace insulation to stabilize the interior temperature and humidity.
- Remove asbestos at mechanical equipment and plumbing.
- Restore public spaces.

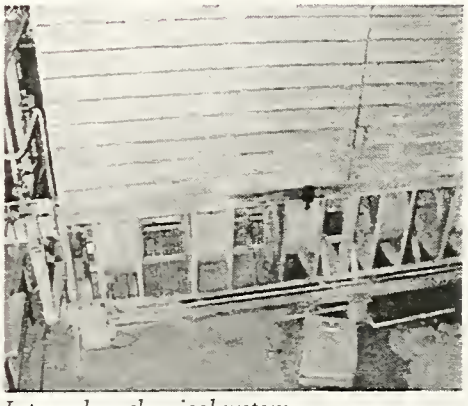
Arts and Industries Building

Analysis & Impact of Deferral

- Deferral of this renovation will increase the rate of deterioration to the building structure and interior finishes, elevate the level of risk to the collections, and continue to subject visitors and staff to an uncomfortable and substandard environment.
- Without major renewal the risk of mechanical system failure, extensive enough to result in emergency closure of all or part of building to public, increases annually over the next eight years.
- Cost to repair obsolete equipment will continue to increase, limiting resources available for ongoing repair of other buildings.
- Mechanical and electrical equipment are at the end of their useful life, incidence of repairs is more frequent and increasingly more costly.



Suspended fabric to shield visitors & exhibits from falling paint flakes



Internal mechanical system

Arts and Industries Building

Recent Work Completed or In Progress

98-99	Paint & Repair Exterior Window	$ 350,000
98-99	Architect-Engineer has completed a Master Plan, needs assessment, and the pre-design phase of the project. The Schematic Phase is expected to be completed shortly, and a contract for the development of construction documents will follow.	$ 2,000,000
99-00	Roof design: repairs and upgrades	$ 267,000

Arts and Industries Building

Related Studies and Projects

1980 "Smithsonian Institution Arts and Industries Building: Roof and Façade Restoration"
McGaughy, Marshall and McMillan

1991 "Asbestos Study, Arts and Industries Building"
Prepared by VERSAR Engineering

1992 "Smithsonian Institution Model Commissioning Plan & Guide Specifications"
OM-810(R), SI Energy Management, dated May 21, 1992

1993 "Building Evaluation Study; Arts & Industries Building"
Prepared by RTKL Associates, Inc., dated October 18, 1993

1996 "SI-Wide Accessibility Study and Implementation Plan; Arts & Industries Building"
Prepared by Heery International; OPP Project No. 910005

1996 "Central Chilled Water Plant Study"
Prepared by Engineering Applications Consultants, PC

1998 "Arts and Industries Building Roof Survey Conceptual Estimate"
Scharf-Godfrey Inc.

1998 "Smithsonian Institution Arts and Industries Building Survey and Exploration of Existing Conditions Appendix A-E"
Ehrenkrantz Eckstut & Kuhn Architects

1998 "Smithsonian Institution Arts and Industries Building Survey and Exploration of Existing Conditions Draft Project Report"
Ehrenkrantz Eckstut & Kuhn Architects

Smithsonian Institution Building

The Castle

Background

Area in square meters:	9,662
Area in square feet:	104,000
Architect:	James Renwick, Jr.
Architectural style:	Medieval revival
Construction:	Masonry
Funding:	Original endowment of James Smithson
Construction completion:	1855
Major Renovations:	Reconstruction after fire 1865-1870; Renovation of east wing 1884; Renovation and modernization of systems 1965-1970; window restoration 1989-1990

History

The Institution's first building, popularly known as the "Castle", is now almost 150 years old. For the Institution's first thirty years, the Castle housed all aspects of Smithsonian operations, including research, administrative offices, lecture halls, laboratories, a library, exhibition, storage and living quarters for the Secretary and his family.

Today the Castle serves as the administrative headquarters for the Institution, housing the Smithsonian Visitor Information and Associates Reception Center and the offices of the Secretary, other staff and administrative functions.

Smithsonian Institution Building

The Castle

Current Conditions

- The mechanical (HVAC), electrical and other utility systems, near the end of their normal lifespans, are subject to continual breakdown and require frequent manual operation. Equipment and piping are contaminated with asbestos.

- Heating and cooling is provided by fan coil units at the building exterior walls, with fresh-air supplied from air-handling units located in the attics. The system cannot meet the current heating and cooling loads in the building. Condensation collection and inefficient equipment pose problems. Air circulation within offices is insufficient, and humidity control is limited.

- Chilled water is supplied from cooling towers and chillers in the A&I Building, which are almost beyond repair. Steam is supplied by GSA through the steam station at NMNH.

- Frequent maintenance of interior finishes is required due to leaks from deteriorated piping and age of some roof areas. Wall surfaces are contaminated with lead paint.

- Periodic power failures occur due to age of electrical wiring, some installed prior to 1950. The system is difficult to maintain without damage to historic construction and features.

- The communications system is inadequate to meet the needs of the activities in the building.

- The building's elevators are antiquated and require frequent repair, and many spaces do not meet ADA requirements.

- The emergency lighting system is outdated and does not function effectively.

- In the basement, low hanging wires and pipes in passageways used by staff moving between the Arts and Industries Building, the Castle, and the Quadrangle Building are a hazard.

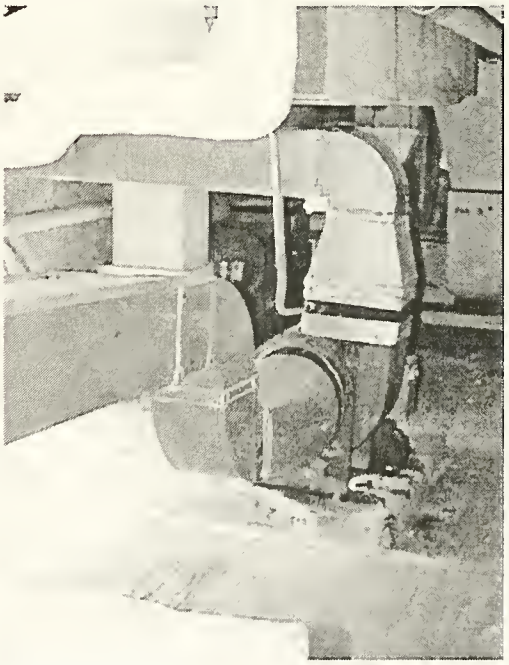
- Regular maintenance of exterior stone is required, due to the age and weathering of stone and mortar.

Smithsonian Institution Building
The Castle

Impact of Deficiencies

- The HVAC system cannot maintain the required environment efficiently. Exhaust fumes, air circulation, and lack of adequate temperature and humidity control are problematic.
- Replacement parts are not available and the system does not meet existing code requirements. This equipment requires costly emergency repairs, and parts must be manufactured specially at extreme expense.
- The outdated and antiquated equipment is costly in terms of energy consumption and manpower to operate and repair.
- The fire detection and suppression systems are not in compliance with current NFPA and ADA codes. Several areas of the building do not have either a detection or suppression system. Lack of coverage places staff and the public at risk.
- Roof and facade leaks cause damage to the building interior and risk damage to the structure.

Plaster damaged by leaking fan coil unit



Mechanical room

Smithsonian Institution Building
The Castle

Required Actions

Estimated Cost $35,000,000-$50,000,000

- Replace the mechanical, electrical, plumbing, and communications systems with new energy efficient components that control and monitor environmental conditions to meet climate control requirements, ensure continued operation and long-term preservation of the building, provide future savings in operating and maintenance costs, and meet contemporary codes and ventilation standards.
- Overhaul the elevators, abate or encapsulate asbestos and lead paint, and make required ADA modifications.
- Install fire protection sprinklers in the Great Hall.
- Replace obsolete electrical panel boards, switch gear and distribution networks with efficient equipment.
- Install new electrical, computer and telephone conduit and cabling.
- Continue to repair and stabilize facade.
- Remove asbestos from mechanical equipment and piping.
- Repair and replace deteriorated portions of existing flashing and roofing systems with new materials.

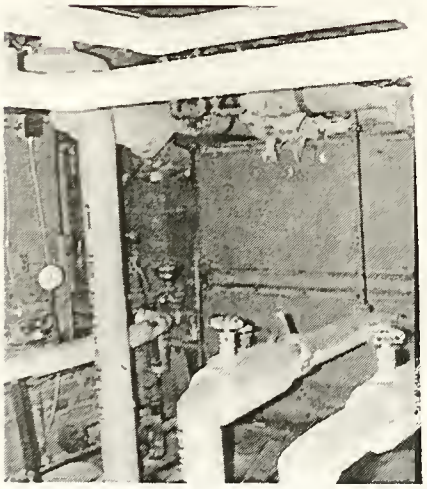
Water infiltration from roof

Slate patches and flashing on roof

Smithsonian Institution Building
The Castle

Analysis & Impact of Deferral

- Mechanical equipment is at the end of its service life. Equipment is maintained by special fabrication of components to extend the equipment. Risk of extensive mechanical system failure without major renewal could result in emergency closure of part of building to public or staff, and costly relocation of activities.
- Cost to repair obsolete equipment will continue to increase, taking limited resources away from ongoing repair of other buildings.
- Increasing loss of reliability of building equipment and exterior envelope components.
- Continued disruption of headquarters offices and staff operations is detrimental to the entire Smithsonian Institution organization.



Damaged pipe insulation & asbestos

Representative window

Smithsonian Institution Building
The Castle

Recent Work Completed or In Progress

90-94	Combined 20 smaller projects into one scope of work including: window restoration, fire-protection, roof & gutter repair, façade repairs	$	4,880,580
93-99	Stone repairs	$	294,000
1996	Window replacement	$	1,200,000
98-99	Miscellaneous construction modifications and communications upgrades	$	66,000
1999	Abatement; lead and asbestos	$	75,000
1999	Design, field survey, programmatic analysis, and concept submissions have been completed for exterior window painting and repair.	$	450,000

Related Studies and Projects

1972 "SI-Wide Accessibility Asbestos Materials Study"
Prepared by Versar

1987 "Asbestos Study, Smithsonian Institution Building"
Prepared by Law Engineering

1989 "SIB Floor Plan Chronology"
Survey by Office of Architectural History & Preservation

1989 "Structural Preplanning Study"
Prepared by Harry Weese & Associates

1987 "Asbestos Study, Smithsonian Institution Building"
Prepared by Law Engineering

1989 "SIB Floor Plan Chronology"
Survey by Office of Architectural History & Preservation

1993 "Building Evaluation Study, Smithsonian Institution Building"
Prepared by RTKL

1995 "Indoor Air Quality Evaluation, Smithsonian Institution Building"
Prepared by Law Engineering

1997 "Building Evaluation, system Upgrade and Coordination Study"
Prepared by RTKL

National Zoological Park

National Zoological Park and Conservation Research Center

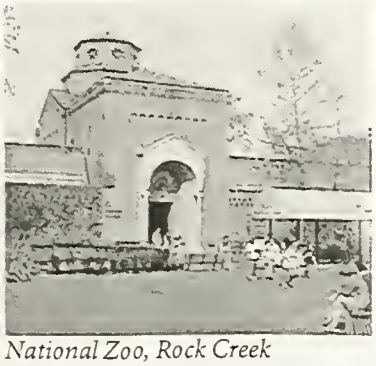
Background Facts

National Zoological Park, Washington, D.C.

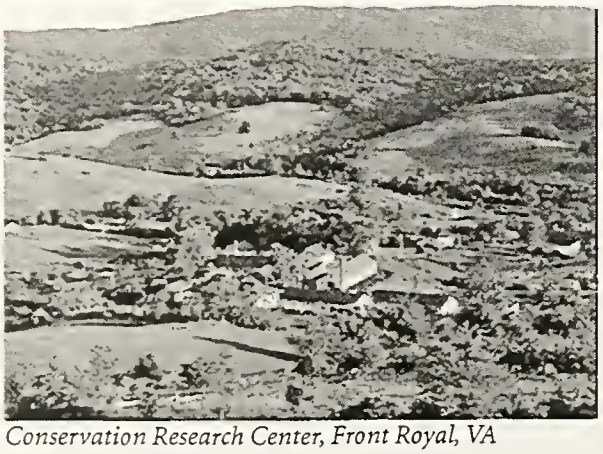
Site area:	167 acres in Washington D.C.
Area of buildings:	750,000 square feet
Utilities:	3 miles water mains
	4 miles sewer lines
	2.5 miles storm drainage
	1 mile gas mains
	1 mile high voltage electrical service
	1 mile medium voltage electrical service
Funding:	Appropriated by Congress in 1889
Landscape Architect:	Frederick Law Olmsted designed original site

Conservation Research Center, Front Royal, Virginia

Site area:	3,150 acres in Front Royal, Virginia
Area of buildings:	250,000 square feet
Utilities:	2-1/2 miles roads
	20 miles jeep trails
	30 miles fences
	miles of electrical and water service
Funding:	Appropriated by Congress in 1974



National Zoo, Rock Creek



Conservation Research Center, Front Royal, VA

National Zoological Park

National Zoological Park and Conservation Research Center

History

National Zoological Park

The mission of the National Zoological Park (NZP) is the advancement of science, biological conservation, education and recreation. NZP serves the public and specialized audiences by promoting the conservation of life on Earth through informal and formal education, research, and animal health programs that utilize its unique collection of living animals and plants. More than a zoological park concerned with animals, the Zoo is a biological park (BioPark) whose scope extends to the whole world.

NZP was founded in 1889 in Washington, D.C. This public facility has 23 major buildings along with many smaller barns and support structures throughout the site. The first barn was built in 1891 and the first permanent building was built in 1892. Additional buildings have been added over the years. The Elephant House, Reptile House and Bird House date to the WPA era. The existing buildings are generally in fair condition, with several requiring extensive renovation of mechanical, plumbing and electrical systems. The large site area has an extensive network of underground utilities and services, including water, electricity, steam, gas, sanitary and storm sewer, roads, telephone, and fiber-optic cabling. Recent projects include Amazonia and Amazonia Science Gallery, Think Tank, Tiger Tracks and Grasslands.

Conservation and Research Center

The National Zoological Park acquired the Front Royal, Virginia Conservation Research Center (CRC) property from the U.S. Army in 1974. Located on 1,275 hectares (3,150 acres) of forest and meadow in the Blue Ridge Mountains of northern Virginia, CRC serves as the hub for a broad array of regional, national, and international Smithsonian conservation programs. CRC is one of the world's leading centers for conservation research and training. Its programs focus on the preservation of endangered species and their habitats, and the development of specialized education and training.

The property was initially purchased and developed by the Army to serve as one of the Aleshire Quartermaster Remount Depots. Some buildings date to the early 1900's and others were added by the Army over their years of tenure. NZP built a new Veterinary Hospital and renovated many of the buildings for laboratory and animal enclosures after acquiring the property in 1974. The site has over 120 structures of varying ages and sizes, a large network of roads, jeep trails, and utility infrastructure consisting of electric, water, sewer and storm drainage.

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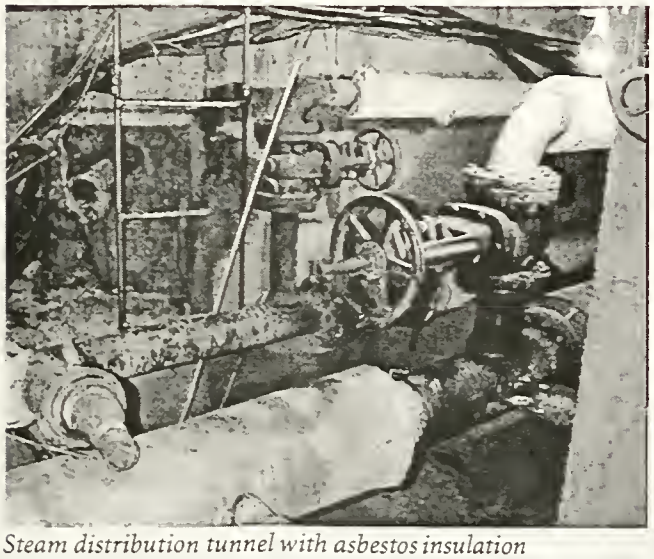
Current Conditions

- 23 major buildings at the Zoo and over 120 structures at CRC of varying conditions, from new to recently renovated to poor.
- Structural failures in need of repair exist at the Australia Building and Holt House. Failing barn structures at CRC recently repaired.
- Roofing and waterproofing problems exist at Australia, Bear, Panda, Bird, Small Mammal, Reptile, Lion/Tiger, Mane Restaurant and several small barns and support structures. Other roofs and terraces will soon need replacement.
- Heating and cooling systems at Australia, Bear, Panda, Bird, Reptile, and Mane Restaurant and Police Station buildings are in poor condition. HVAC improvements have been made to four animal holding facilities at CRC.
- The three large central boilers in the main plant at the Zoo were replaced four years ago. Asbestos is being removed on a gradual basis at both facilities. Small boilers at CRC are being replaced as needed.
- Concrete exhibit rock work is deteriorating in the Beaver Valley and Bear exhibits. One large rock failure at the sea lion pool is currently being repaired.



Steam distribution tunnel with asbestos insulation

Reptile House pools leak

Current Conditions, Continued

- A central fire alarm system has been newly installed at the Zoo. Existing smoke detection and fire alarm systems in many buildings need to be extended and improved to meet current codes and provide better coverage of the buildings. No central system exists at CRC.

- The 4,160 KVA medium voltage underground electric distribution that serves approximately half of the Zoo buildings is in need of replacement due to ground faults and poor condition of wiring.

- The Zoo's water service dates back to the 1890's. The quantity of water now supplied to the site is insufficient; whenever one of the large animal pools is filled, water is unavailable to other areas of the Zoo .

- The spring fed water tower at CRC is in need of relining.

- The District of Columbia is switching from chlorine to chloramine water treatment. New water treatment systems must be installed in all aquatic animal exhibits and pools to eliminate the hazard of chloramines from the water.

- Portions of the Zoo's sanitary and storm drainage systems date to the original site development in the 1890's and have been subsequently extended and modified. Failures in these systems currently cause soil erosion at four locations.

- A master plan to prioritize major facility maintenance projects is being prepared in conjunction with a utility improvement plan so that improvements can be made in an orderly fashion to minimize disruption of the visitor experience. Once complete, a master plan for CRC will also be prepared.

- The existing maintenance facilities at CRC are currently housed in small sheds and barns, scattered around the property. Several of these structures are original, and unsafe for use. Others lack adequate ventilation and safety features for specialized carpentry, painting and welding operations, and place staff at risk.

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Impact of Deficiencies

- Structural deficiencies pose a risk to the welfare of the public, staff and animal collection. Temporary measures such as shoring and bracing are in place.
- Water penetration from leaking roofs and terraces pose an immediate hazard to the collection and if left uncorrected, will cause structural failure.
- The inability to maintain stable temperature, humidity and adequate quantities of fresh air threatens the welfare of the animals and affects visitor comfort.
- Structural failure of the exhibit rock work poses a direct threat to the safety and welfare of the seals, sea lions, and bears. Spalling concrete could injure an animal and compromise security of the exhibits.
- Deficiency of fire alarm systems could lengthen the time it takes to locate a fire within a building and could threaten the welfare of the collection.
- A prolonged failure of the electrical service would disable critical hot-wire containment systems, which could lead to animal escapes.
- Deficiency of the water service for fire sprinkler systems threatens the safety and welfare of the animals.
- Chloramines in the water cause animal health and welfare problems for all fresh water aquatic animals, so new filtration systems must be added.
- Deficiency of the storm water system creates public safety concerns and adverse environmental impact when pavement collapses and hillsides erode.
- Unsafe maintenance facilities at CRC prevent staff from providing the full range of services needed to keep the facility operational, and continues hazardous working conditions.

National Zoological Park

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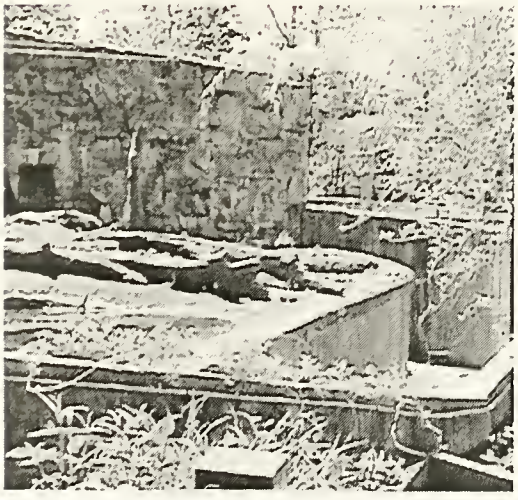
Required Actions

Estimated Cost $75,000,000-$100,000,000

- Installation of a new 12" main water line is needed to increase water supply capacity and to allow fire sprinklers to be installed in all buildings.
- Installation of chloramine water treatment systems.
- Renovation of Australia Building, Bear Exhibit, Mane Building, Elephant House, Property Yard and Valley Keeper, Reptile Building, Deer and Tapir Building, and the Seal and Sea Lion Exhibits at the Rock Creek property.
- Ongoing facility maintenance to repair roofs, waterproofing, walls, exhibits, HVAC, electric, lighting, safety and security systems of the buildings.
- Fire alarm and smoke detection improvements; ongoing work to extend and enhance fire protection in all existing buildings to meet code.
- Replace unsafe and scattered maintenance facilities at CRC with a consolidated maintenance facility.
- Upgrade existing security systems in all facilities.
- Modifications throughout both facilities to improve site and exhibit access.



Bear exhibit with roof failure

Water line failure

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Analysis and Impact of Deferral

- Continued deterioration of the buildings, site, and infrastructure.
- Without renovation and repair, several exhibits, including Australia and Bear, may need to be vacated.
- Increased risk of damage to animals due to system failures, loss of water, diminished water quality, temperature and humidity fluctuations, theft, vandalism, and fire.
- Increased cost of maintenance and emergency repair for mechanical and electrical equipment, and site utilities.
- Increased risk of lost time for staff due to poor environmental and working conditions.
- Increased risk of hazard to the public from potential exotic animal escapes.

Storm drain failure at Valley Trail

Seal pool rock deterioration

National Zoological Park

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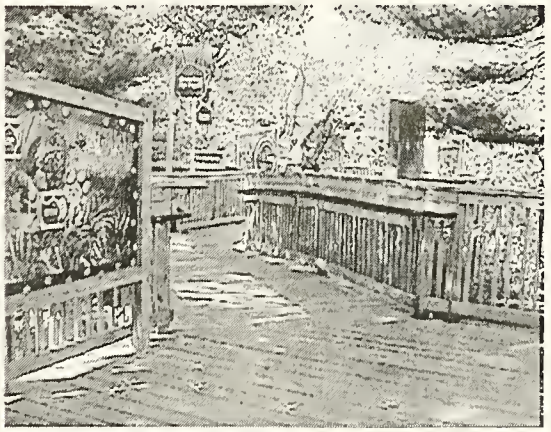
Recent Work Completed or In Progress

1997	Repair HVAC and electrical system failures, improve exhibits, renovate area for bison and prairie dogs, replace central restrooms, design for system improvements, misc. repairs	$ 3,850,000
1998	Repair HVAC and electrical system failures, repair drainage and water system failures, rebuild Blue Road, water study, renovate Genetics & Quarantine, waterproof GSPB, misc. repairs	$ 3,850,000
1999	Central fire alarm, improve exhibits, utility infrastructure master plan study renovate Zebra, misc. repairs	$ 4,400,000

Utility infrastructure master plan is currently in process, to eliminate deficiencies and improve basic site service and utilities for the future. This project includes water, storm and sanitary sewer, electric, fiber-optic communications, telephone, steam and gas systems.

A small sprinkler system is also being installed to reduce the current fire hazard in the hay storage room at the Elephant House.

Blue Road reconstruction



New "Tigers Tracks" exhibit

National Zoological Park

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Related Studies and Projects

1997 "Structural Condition Survey of the Upper Bear Line"
Prepared by Cagley & Associates; dated July 1998

1997 "Central Fire Alarm System, Phase 1 Study"
Prepared by Einhorn, Yaffee, Prescott; dated October 1997

1997 "Think Tank Ceiling Access Feasibility Study"
Prepared by Einhorn, Yaffee, Prescott; dated May 1997

1997 "Emergency Survey & Design for the Stabilization of the Blue Road"
Prepared by Einhorn, Yaffee, Prescott; dated January 1997

1997 "Facilities Assessment Report, National Zoological Park, Vols 1-9"
Prepared by Office of Physical Plant

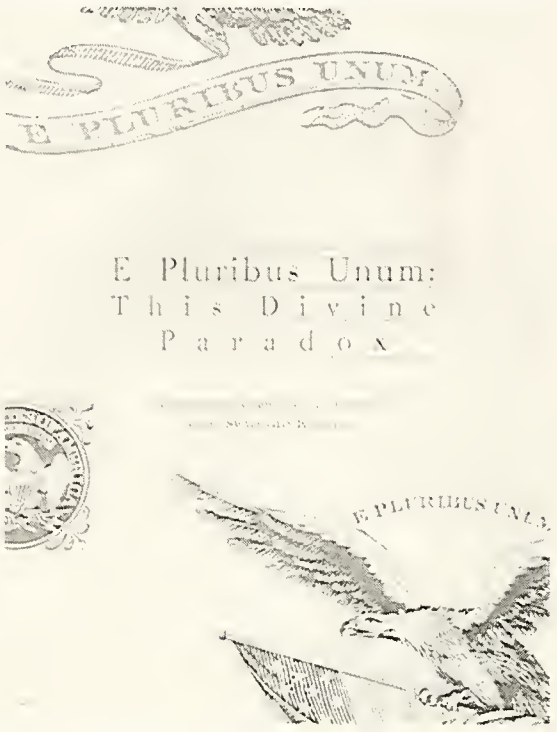
1998 "The Concept Study for the Rehabilitation of the Mane Restaurant"
Prepared by Einhorn, Yaffee, Prescott; dated Dec. 1998

1998 "Site Water Distribution System Survey"
Prepared by Einhorn, Yaffee, Prescott; dated July 1998

1999 "Energy and Water Conservation Feasibility Study"
Prepared by Henry Adams, Inc.; dated May 1999

1999 "Security Concept Report"
Prepared by Ralph Ward, Ltd.; dated January 1999

Reference



"Renovation and restoration. The magnificent vista along the Mall hides major needs for renovation and restoration of the Smithsonian's historic buildings. The same is true of many of the buildings the Smithsonian now owns and operates throughout the United States and abroad. Some of these facilities were built early in this century. The costs of maintaining them, let alone upgrading them to meet modern technical, safety, and electronic requirements and the increased numbers of visitors, are growing at an impressive rate as the buildings age. The deferred maintenance problem is large and growing. Without prompt attention to these needs, the Institution risks becoming a monument to the past, and an aging, dilapidated monument at that. Galleries, perhaps whole museums, may have to be closed. The precious collections will deteriorate from lack of care and safe storage. The country displayed to international visitors at our national cultural center will be old-fashioned, seedy, and spiritless.

The costs of maintaining the Institution's many buildings will increase as they become more antiquated. A continuing, long-term plan for needed renovations and restorations must begin immediately if the costs are to be contained in the future. The Institution has done a thorough job of identifying needs and estimating costs. A total of $50 million dollars each year for the next decade would assure that present facilities are restored to the point of being safe and appropriate for people and for collections. In contrast, the current annual federal appropriation of $24 million for repair and restoration assures that buildings will deteriorate further. It is easy to say that private fund raising should supply the $26 million difference. However, the experience of people who solicit philanthropic donations for other institutions attests that private donors are not generous when it comes to maintenance, renovation, and repair. The American people must ask their representatives in Congress to become dedicated supporters of the renovation and restoration of our nation's cultural institution. Otherwise, the Smithsonian will no longer convey to our citizens, or to the world, the image of a nation rich in cultural experience, in natural resources, and in its vision for the future."